

## 7.0 Reading Comprehension

Reading comprehension questions appear in the Verbal section of the GMAT® exam. The Verbal section uses multiple-choice questions to measure your ability to read and comprehend written material, to reason and evaluate arguments, and to correct written material to conform to standard written English. Because the Verbal section includes content from a variety of topics, you may be generally familiar with some of the material; however, neither the passages nor the questions assume knowledge of the topics discussed. Reading comprehension questions are intermingled with critical reasoning and sentence correction questions throughout the Verbal section of the test.

You will have 75 minutes to complete the Verbal section, or an average of about  $1\frac{3}{4}$  minutes to answer each question. Keep in mind, however, that you will need time to read the written passages—and that time is not factored into the  $1\frac{3}{4}$  minute average. You should therefore plan to proceed more quickly through the reading comprehension questions in order to give yourself enough time to read the passages thoroughly.

Reading comprehension questions begin with written passages up to 350 words long. The passages discuss topics from the social sciences, humanities, the physical or biological sciences, and such business-related fields as marketing, economics, and human resource management. The passages are accompanied by questions that will ask you to interpret the passage, apply the information you gather from the reading, and make inferences (or informed assumptions) based on the reading. For these questions, you will see a split computer screen. The written passage will remain visible on the left side as each question associated with that passage appears in turn on the right side. You will see only one question at a time, however. The number of questions associated with each passage may vary.

As you move through the reading comprehension sample questions, try to determine a process that works best for you. You might begin by reading a passage carefully and thoroughly, though some test-takers prefer to skim the passages the first time through, or even to read the first question before reading the passage. You may want to reread any sentences that present complicated ideas or introduce terms that are new to you. Read each question and series of answers carefully. Make sure you understand exactly what the question is asking and what the answer choices are.

If you need to, you may go back to the passage and read any parts that are relevant to answering the question. Specific portions of the passages may be highlighted in the related questions.

The following pages describe what reading comprehension questions are designed to measure, present the directions that will precede questions of this type, and describe the various question types. This chapter also provides test-taking strategies, sample questions, and detailed explanations of all the questions. The explanations further illustrate the ways in which reading comprehension questions evaluate basic reading skills.

## 7.1 What Is Measured

Reading comprehension questions measure your ability to understand, analyze, and apply information and concepts presented in written form. All questions are to be answered on the basis of what is stated or implied in the reading material, and no specific prior knowledge of the material is required.

The GMAT reading comprehension questions evaluate your ability to do the following:

- **Understand words and statements.**

Although the questions do not test your vocabulary (they will not ask you to define terms), they do test your ability to interpret special meanings of terms as they are used in the reading passages. The questions will also test your understanding of the English language. These questions may ask about the overall meaning of a passage.

- **Understand logical relationships between points and concepts.**

This type of question may ask you to determine the strong and weak points of an argument or evaluate the relative importance of arguments and ideas in a passage.

- **Draw inferences from facts and statements.**

The inference questions will ask you to consider factual statements or information presented in a reading passage and, on the basis of that information, reach conclusions.

- **Understand and follow the development of quantitative concepts as they are presented in written material.**

This may involve the interpretation of numerical data or the use of simple arithmetic to reach conclusions about material in a passage.

There are six kinds of reading comprehension questions, each of which tests a different skill. The reading comprehension questions ask about the following areas:

### Main idea

Each passage is a unified whole—that is, the individual sentences and paragraphs support and develop one main idea or central point. Sometimes you will be told the central point in the passage itself, and sometimes it will be necessary for you to determine the central point from the overall organization or development of the passage. You may be asked in this kind of question to

- recognize a correct restatement, or paraphrasing, of the main idea of a passage
- identify the author's primary purpose or objective in writing the passage
- assign a title that summarizes, briefly and pointedly, the main idea developed in the passage

### Supporting ideas

These questions measure your ability to comprehend the supporting ideas in a passage and differentiate them from the main idea. The questions also measure your ability to differentiate ideas that are *explicitly stated* in a passage from ideas that are *implied* by the author but that are not explicitly stated. You may be asked about

- facts cited in a passage
- the specific content of arguments presented by the author in support of his or her views
- descriptive details used to support or elaborate on the main idea



Whereas questions about the main idea ask you to determine the meaning of a passage *as a whole*, questions about supporting ideas ask you to determine the meanings of individual sentences and paragraphs that *contribute* to the meaning of the passage as a whole. In other words, these questions ask for the main point of *one small part* of the passage.

## Inferences

These questions ask about ideas that are not explicitly stated in a passage but are *implied* by the author. Unlike questions about supporting details, which ask about information that is directly stated in a passage, inference questions ask about ideas or meanings that must be inferred from information that is directly stated. Authors can make their points in indirect ways, suggesting ideas without actually stating them. Inference questions measure your ability to understand an author's intended meaning in parts of a passage where the meaning is only suggested. These questions do not ask about meanings or implications that are remote from the passage; rather, they ask about meanings that are developed indirectly or implications that are specifically suggested by the author.

To answer these questions, you may have to

- logically take statements made by the author one step beyond their literal meanings
- recognize an alternative interpretation of a statement made by the author
- identify the intended meaning of a word used figuratively in a passage

If a passage explicitly states an effect, for example, you may be asked to infer its cause. If the author compares two phenomena, you may be asked to infer the basis for the comparison. You may be asked to infer the characteristics of an old policy from an explicit description of a new one. When you read a passage, therefore, you should concentrate not only on the explicit meaning of the author's words, but also on the more subtle meaning implied by those words.

## Applying information to a context outside the passage itself

These questions measure your ability to discern the relationships between situations or ideas presented by the author and other situations or ideas that might parallel those in the passage. In this kind of question, you may be asked to

- identify a hypothetical situation that is comparable to a situation presented in the passage
- select an example that is similar to an example provided in the passage
- apply ideas given in the passage to a situation not mentioned by the author
- recognize ideas that the author would probably agree or disagree with on the basis of statements made in the passage

Unlike inference questions, application questions use ideas or situations *not* taken from the passage. Ideas and situations given in a question are *like* those given in the passage, and they parallel ideas and situations in the passage; therefore, to answer the question, you must do more than recall what you read. You must recognize the essential attributes of ideas and situations presented in the passage when they appear in different words and in an entirely new context.

## Logical structure

These questions require you to analyze and evaluate the organization and logic of a passage. They may ask you

- how a passage is constructed—for instance, does it define, compare or contrast, present a new idea, or refute an idea?
- how the author persuades readers to accept his or her assertions
- the reason behind the author's use of any particular supporting detail
- to identify assumptions that the author is making
- to assess the strengths and weaknesses of the author's arguments
- to recognize appropriate counterarguments

These questions measure your ability not only to comprehend a passage but also to evaluate it critically. However, it is important for you to realize that logical structure questions do not rely on any kind of formal logic, nor do they require you to be familiar with specific terms of logic or argumentation. You can answer these questions using only the information in the passage and careful reasoning.

## About the style and tone

Style and tone questions ask about the expression of a passage and about the ideas in a passage that may be expressed through its diction—the author's choice of words. You may be asked to deduce the author's attitude to an idea, a fact, or a situation from the words that he or she uses to describe it. You may also be asked to select a word that accurately describes the tone of a passage—for instance, “critical,” “questioning,” “objective,” or “enthusiastic.”

To answer this type of question, you will have to consider the language of the passage as a whole. It takes more than one pointed, critical word to make the tone of an entire passage “critical.” Sometimes, style and tone questions ask what audience the passage was probably intended for or what type of publication it probably appeared in. Style and tone questions may apply to one small part of the passage or to the passage as a whole. To answer them, you must ask yourself what meanings are contained in the words of a passage beyond the literal meanings. Did the author use certain words because of their emotional content, or because a particular audience would expect to hear them? Remember, these questions measure your ability to discern meaning expressed by the author through his or her choice of words.

## 7.2 Test-Taking Strategies

### 1. Do not expect to be completely familiar with any of the material presented in reading comprehension passages.

You may find some passages easier to understand than others, but all passages are designed to present a challenge. If you have some familiarity with the material presented in a passage, do not let this knowledge influence your choice of answers to the questions. Answer all questions on the basis of what is *stated* or *implied* in the passage itself.

- 2. Analyze each passage carefully, because the questions require you to have a specific and detailed understanding of the material.**

You may find it easier to do the analysis first, before moving to the questions. Or, you may find that you prefer to skim the passage the first time and read more carefully once you understand what a question asks. You may even want to read the question before reading the passage. You should choose the method most suitable for you.

- 3. Focus on key words and phrases, and make every effort to avoid losing the sense of what is discussed in the passage.**

Keep the following in mind:

- Note how each fact relates to an idea or an argument.
- Note where the passage moves from one idea to the next.
- Separate main ideas from supporting ideas.
- Determine what conclusions are reached and why.

- 4. Read the questions carefully, making certain that you understand what is asked.**

An answer choice that accurately restates information in the passage may be incorrect if it does not answer the question. If you need to, refer back to the passage for clarification.

- 5. Read all the choices carefully.**

Never assume that you have selected the best answer without first reading all the choices.

- 6. Select the choice that answers the question best in terms of the information given in the passage.**

Do not rely on outside knowledge of the material to help you answer the questions.

- 7. Remember that comprehension—not speed—is the critical success factor when it comes to reading comprehension questions.**

## 7.3 The Directions

These are the directions that you will see for reading comprehension questions when you take the GMAT exam. If you read them carefully and understand them clearly before going to sit for the test, you will not need to spend too much time reviewing them once you are at the test center and the test is under way.

The questions in this group are based on the content of a passage. After reading the passage, choose the best answer to each question. Answer all questions following the passage on the basis of what is *stated or implied in the passage*.

## 7.4 Practice Questions

Each of the reading comprehension questions is based on the content of a passage. After reading the passage answer all questions pertaining to it on the basis of what is stated or implied in the passage. For each question, select the best answer of the choices given.

- Line Biologists have advanced two theories to explain why schooling of fish occurs in so many fish species. Because schooling is particularly widespread among species of small fish, both theories assume that
- (5) schooling offers the advantage of some protection from predators.

- Proponents of theory A dispute the assumption that a school of thousands of fish is highly visible. Experiments have shown that any fish can be seen,
- (10) even in very clear water, only within a sphere of 200 meters in diameter. When fish are in a compact group, the spheres of visibility overlap. Thus the chance of a predator finding the school is only slightly greater than the chance of the predator finding a single fish
- (15) swimming alone. Schooling is advantageous to the individual fish because a predator's chance of finding any particular fish swimming in the school is much smaller than its chance of finding at least one of the same group of fish if the fish were dispersed
- (20) throughout an area.

- However, critics of theory A point out that some fish form schools even in areas where predators are abundant and thus little possibility of escaping detection exists. They argue that the school continues
- (25) to be of value to its members even after detection. They advocate theory B, the "confusion effect," which can be explained in two different ways.

- Sometimes, proponents argue, predators simply cannot decide which fish to attack. This indecision
- (30) supposedly results from a predator's preference for striking prey that is distinct from the rest of the school in appearance. In many schools the fish are almost identical in appearance, making it difficult for a predator to select one. The second explanation for
- (35) the "confusion effect" has to do with the sensory confusion caused by a large number of prey moving around the predator. Even if the predator

- makes the decision to attack a particular fish, the movement of other prey in the school can
- (40) be distracting. The predator's difficulty can be compared to that of a tennis player trying to hit a tennis ball when two are approaching simultaneously.



Questions 1–4 refer to the passage above.

1. According to the passage, theory B states that which of the following is a factor that enables a schooling fish to escape predators?
  - (A) The tendency of fish to form compact groups
  - (B) The movement of other fish within the school
  - (C) The inability of predators to attack schools
  - (D) The ability of fish to hide behind one another in a school
  - (E) The great speed with which a school can disperse
2. According to the passage, both theory A and theory B have been developed to explain how
  - (A) fish hide from predators by forming schools
  - (B) forming schools functions to protect fish from predators
  - (C) schooling among fish differs from other protective behaviors
  - (D) small fish are able to make rapid decisions
  - (E) small fish are able to survive in an environment densely populated by large predators
3. According to one explanation of the “confusion effect,” a fish that swims in a school will have greater advantages for survival if it
  - (A) tends to be visible for no more than 200 meters
  - (B) stays near either the front or the rear of a school
  - (C) is part of a small school rather than a large school
  - (D) is very similar in appearance to the other fish in the school
  - (E) is medium-sized

4. The author is primarily concerned with

- (A) discussing different theories
- (B) analyzing different techniques
- (C) defending two hypotheses
- (D) refuting established beliefs
- (E) revealing new evidence

Line

(5)

(10)

(15)

(20)

(25)

(30)

Line Ecoefficiency (measures to minimize environmental impact through the reduction or elimination of waste from production processes) has become a goal for companies worldwide, with many realizing significant cost savings from such innovations. Peter Senge and Goran Carstedt see this development as laudable but suggest that simply adopting ecoefficiency innovations could actually worsen environmental stresses in the future. Such innovations reduce production waste but do not alter the number of products manufactured nor the waste generated from their use and discard; indeed, most companies invest in ecoefficiency improvements in order to increase profits and growth. Moreover, there is no guarantee that increased economic growth from ecoefficiency will come in similarly ecoefficient ways, since in today's global markets, greater profits may be turned into investment capital that could easily be reinvested in old-style eco-inefficient industries. Even a vastly more ecoefficient industrial system could, were it to grow much larger, generate more total waste and destroy more habitat and species than would a smaller, less ecoefficient economy. Senge and Carstedt argue that to preserve the global environment and sustain economic growth, businesses must develop a new systemic approach that reduces total material use and total accumulated waste. Focusing exclusively on ecoefficiency, which offers a compelling business case according to established thinking, may distract companies from pursuing radically different products and business models.

Questions 5–7 refer to the passage above.

5. The primary purpose of the passage is to
  - (A) explain why a particular business strategy has been less successful than was once anticipated
  - (B) propose an alternative to a particular business strategy that has inadvertently caused ecological damage
  - (C) present a concern about the possible consequences of pursuing a particular business strategy
  - (D) make a case for applying a particular business strategy on a larger scale than is currently practiced
  - (E) suggest several possible outcomes of companies' failure to understand the economic impact of a particular business strategy
6. The passage mentions which of the following as a possible consequence of companies' realization of greater profits through ecoefficiency?
  - (A) The companies may be able to sell a greater number of products by lowering prices.
  - (B) The companies may be better able to attract investment capital in the global market.
  - (C) The profits may be reinvested to increase economic growth through ecoefficiency.
  - (D) The profits may be used as investment capital for industries that are not ecoefficient.
  - (E) The profits may encourage companies to make further innovations in reducing production waste.

7. The passage implies that which of the following is a possible consequence of a company's adoption of innovations that increase its ecoefficiency?
- (A) Company profits resulting from such innovations may be reinvested in that company with no guarantee that the company will continue to make further improvements in ecoefficiency.
- (B) Company growth fostered by cost savings from such innovations may allow that company to manufacture a greater number of products that will be used and discarded, thus worsening environmental stress.
- (C) A company that fails to realize significant cost savings from such innovations may have little incentive to continue to minimize the environmental impact of its production processes.
- (D) A company that comes to depend on such innovations to increase its profits and growth may be vulnerable in the global market to competition from old-style eco-inefficient industries.
- (E) A company that meets its ecoefficiency goals is unlikely to invest its increased profits in the development of new and innovative ecoefficiency measures.

Line  
Archaeology as a profession faces two major  
problems. First, it is the poorest of the poor.  
Only paltry sums are available for excavating and  
even less is available for publishing the results  
(5) and preserving the sites once excavated. Yet  
archaeologists deal with priceless objects every day.  
Second, there is the problem of illegal excavation.  
resulting in museum-quality pieces being sold to the  
highest bidder.

(10) I would like to make an outrageous  
suggestion that would at one stroke provide  
funds for archaeology and reduce the amount  
of illegal digging. I would propose that scientific  
archaeological expeditions and governmental  
(15) authorities sell excavated artifacts on the open  
market. Such sales would provide substantial  
funds for the excavation and preservation of  
archaeological sites and the publication of results.  
At the same time, they would break the illegal  
(20) excavator's grip on the market, thereby decreasing  
the inducement to engage in illegal activities.  
You might object that professionals excavate to  
acquire knowledge, not money. Moreover, ancient  
artifacts are part of our global cultural heritage,  
(25) which should be available for all to appreciate, not  
sold to the highest bidder. I agree. Sell nothing that  
has unique artistic merit or scientific value. But,  
you might reply, everything that comes out of the  
ground has scientific value. Here we part company.  
(30) Theoretically, you may be correct in claiming  
that every artifact has potential scientific value.  
Practically, you are wrong.  
I refer to the thousands of pottery vessels and  
ancient lamps that are essentially duplicates of  
(35) one another. In one small excavation in Cyprus,  
archaeologists recently uncovered 2,000 virtually  
indistinguishable small jugs in a single courtyard.  
Even precious royal seal impressions known as  
"melek" handles have been found in abundance  
(40) —more than 4,000 examples so far.  
The basements of museums are simply not  
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The basements of museums are simply not large enough to store the artifacts that are likely to be discovered in the future. There is not enough money even to catalog the finds; as a result, they

(45) cannot be found again and become as inaccessible as if they had never been discovered. Indeed, with the help of a computer, sold artifacts could be more accessible than are the pieces stored in bulging museum basements. Prior to sale, each could be

(50) photographed and the list of the purchasers could be maintained on the computer. A purchaser could even be required to agree to return the piece if it should become needed for scientific purposes.

It would be unrealistic to suggest that illegal

(55) digging would stop if artifacts were sold on the open market. But the demand for the clandestine product would be substantially reduced. Who would want an unmarked pot when another was available whose provenance was known, and that was dated

(60) stratigraphically by the professional archaeologist who excavated it?



Questions 8–10 refer to the passage above.

8. The primary purpose of the passage is to propose
- (A) an alternative to museum display of artifacts
  - (B) a way to curb illegal digging while benefiting the archaeological profession
  - (C) a way to distinguish artifacts with scientific value from those that have no such value
  - (D) the governmental regulation of archaeological sites
  - (E) a new system for cataloging duplicate artifacts
9. The author implies that all of the following statements about duplicate artifacts are true EXCEPT
- (A) a market for such artifacts already exists
  - (B) such artifacts seldom have scientific value
  - (C) there is likely to be a continuing supply of such artifacts
  - (D) museums are well supplied with examples of such artifacts
  - (E) such artifacts frequently exceed in quality those already cataloged in museum collections
10. Which of the following is mentioned in the passage as a disadvantage of storing artifacts in museum basements?
- (A) Museum officials rarely allow scholars access to such artifacts.
  - (B) Space that could be better used for display is taken up for storage.
  - (C) Artifacts discovered in one excavation often become separated from each other.
  - (D) Such artifacts are often damaged by variations in temperature and humidity.
  - (E) Such artifacts often remain uncataloged and thus cannot be located once they are put in storage.

- Line Io and Europa, the inner two of Jupiter's four largest moons, are about the size of Earth's moon and are composed mostly or entirely of rock and metal. Ganymede and Callisto are larger and roughly
- (5) half ice. Thus, these four moons are somewhat analogous to the planets of the solar system, in which the rock- and metal-rich inner planets are distinct from the much larger gas- and ice-rich outer planets. Jupiter's moons are, however, more "systematic":
- (10) many of their properties vary continuously with distance from Jupiter. For example, Io is ice-free, Europa has a surface shell of ice, and while Ganymede and Callisto are both ice-rich, outermost Callisto has more.
- (15) This compositional gradient has geological parallels. Io is extremely geologically active, Europa seems to be active on a more modest scale, and Ganymede has undergone bouts of activity in its geological past. Only Callisto reveals no geological
- (20) activity. In similar fashion, Callisto's surface is very heavily cratered from the impact of comets and asteroids; Ganymede, like Earth's moon, is heavily cratered in parts; Europa is very lightly cratered; and no craters have been detected on Io, even though
- (25) Jupiter's gravity attracts comets and asteroids passing near it, substantially increasing the bombardment rate of the inner moons compared to that of the outer ones. But because of Io's high degree of geological activity, its surface undergoes
- (30) more-or-less continuous volcanic resurfacing.

Questions 11–13 refer to the passage above.

11. According to the passage, the difference in the amount of cratering on Callisto's and Io's respective surfaces can probably be explained by the difference between these two moons with respect to which of the following factors?
- (A) Size  
(B) Ice content  
(C) The rate of bombardment by comets and asteroids  
(D) The influence of Jupiter's other moons  
(E) The level of geological activity
12. Which of the following best describes the purpose of the second paragraph of the passage?
- (A) To provide further evidence of the systematic variation in the characteristics of Jupiter's four largest moons  
(B) To present a comprehensive theory to explain the systematic variation in the characteristics of Jupiter's four largest moons  
(C) To explain the significance of the systematic variation in the characteristics of Jupiter's four largest moons  
(D) To introduce facts that contradict conventional assumptions about Jupiter's four largest moons  
(E) To contrast the characteristics of Jupiter's four largest moons with the characteristics of the planets of the solar system

13. The author's reference to Jupiter's gravity in line 25 serves primarily to

- (A) indicate why the absence of craters on Io's surface is surprising
- (B) explain the presence of craters on the surface of Jupiter's four largest moons
- (C) provide an explanation for the lack of geological activity on Callisto
- (D) contrast Jupiter's characteristics with the characteristics of its four largest moons
- (E) illustrate the similarity between Jupiter's four largest moons and the planets of the solar system

Line  
 Garvey came to the United States in 1916, he  
 arrived at precisely the right historical moment.  
 What made the moment right was the return of  
 African American soldiers from the First World War  
 (2) in 1918, which created an ideal constituency for  
 someone with Garvey's message of unity, pride,  
 and improved conditions for African American  
 communities.  
 (10) Hoping to participate in the traditional American  
 ethos of individual success, many African American  
 people entered the armed forces with enthusiasm.  
 only to find themselves segregated from white  
 troops and subjected to numerous indignities. They  
 (15) returned to a United States that was as segregated  
 as it had been before the war. Considering similar  
 experiences, anthropologist Anthony F. C. Wallace  
 has argued that when a perceptible gap arises  
 between a culture's expectations and the reality of  
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 revitalization movement: an organized, conscious  
 effort to construct a culture that fulfills long-  
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 Some scholars have argued that Garvey created  
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 1920s, the largest revitalization movement in  
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- Line When Jamaican-born social activist Marcus Garvey came to the United States in 1916, he arrived at precisely the right historical moment. What made the moment right was the return of
- (5) African American soldiers from the First World War in 1918, which created an ideal constituency for someone with Garvey's message of unity, pride, and improved conditions for African American communities.
- (10) Hoping to participate in the traditional American ethos of individual success, many African American people entered the armed forces with enthusiasm, only to find themselves segregated from white troops and subjected to numerous indignities. They
- (15) returned to a United States that was as segregated as it had been before the war. Considering similar experiences, anthropologist Anthony F. C. Wallace has argued that when a perceptible gap arises between a culture's expectations and the reality of
- (20) that culture, the resulting tension can inspire a revitalization movement: an organized, conscious effort to construct a culture that fulfills long-standing expectations.
- Some scholars have argued that Garvey created
- (25) the consciousness from which he built, in the 1920s, the largest revitalization movement in African American history. But such an argument only tends to obscure the consciousness of identity, strength, and sense of history that already
- (30) existed in the African American community. Garvey did not create this consciousness; rather, he gave this consciousness its political expression.

Questions 14–17 refer to the passage above.

14. According to the passage, which of the following contributed to Marcus Garvey's success?
- (A) He introduced cultural and historical consciousness to the African American community.
- (B) He believed enthusiastically in the traditional American success ethos.
- (C) His audience had already formed a consciousness that made it receptive to his message.
- (D) His message appealed to critics of African American support for United States military involvement in the First World War.
- (E) He supported the movement to protest segregation that had emerged prior to his arrival in the United States.
15. The passage suggests that many African American people responded to their experiences in the armed forces in which of the following ways?
- (A) They maintained as civilians their enthusiastic allegiance to the armed forces.
- (B) They questioned United States involvement in the First World War.
- (C) They joined political organizations to protest the segregation of African American troops and the indignities they suffered in the military.
- (D) They became aware of the gap between their expectations and the realities of American culture.
- (E) They repudiated Garvey's message of pride and unity.



16. It can be inferred from the passage that the "scholars" mentioned in line 24 believe which of the following to be true?
- (A) Revitalization resulted from the political activism of returning African American soldiers following the First World War.
  - (B) Marcus Garvey had to change a number of prevailing attitudes in order for his mass movement to find a foothold in the United States.
  - (C) The prevailing sensibility of the African American community provided the foundation of Marcus Garvey's political appeal.
  - (D) Marcus Garvey hoped to revitalize consciousness of cultural and historical identity in the African American community.
  - (E) The goal of the mass movement that Marcus Garvey helped bring into being was to build on the pride and unity among African Americans.
17. According to the passage, many African American people joined the armed forces during the First World War for which of the following reasons?
- (A) They wished to escape worsening economic conditions in African American communities.
  - (B) They expected to fulfill ideals of personal attainment.
  - (C) They sought to express their loyalty to the United States.
  - (D) They hoped that joining the military would help advance the cause of desegregation.
  - (E) They saw military service as an opportunity to fulfill Marcus Garvey's political vision.

Line In terrestrial environments, gravity places special demands on the cardiovascular systems of animals. Gravitational pressure can cause blood to pool in the lower regions of the body, making it difficult to circulate blood to critical organs such as the brain. Terrestrial snakes, in particular, exhibit adaptations that aid in circulating blood against the force of gravity.

(5) The problem confronting terrestrial snakes is best illustrated by what happens to sea snakes when removed from their supportive medium. Because the vertical pressure gradients within the blood vessels are counteracted by similar pressure gradients in the surrounding water, the distribution of blood throughout the body of sea snakes remains about the same regardless of their orientation in space. provided they remain in the ocean. When removed from the water and tilted at various angles with the head up, however, blood pressure at their midpoint drops significantly, and at brain level falls to zero.

(10) That many terrestrial snakes in similar spatial orientations do not experience this kind of circulatory failure suggests that certain adaptations enable them to regulate blood pressure more effectively in those orientations.

(15) One such adaptation is the closer proximity of the terrestrial snake's heart to its head, which helps to ensure circulation to the brain, regardless of the snake's orientation in space. The heart of sea snakes can be located near the middle of the body, a position that minimizes the work entailed in circulating blood to both extremities. In arboreal snakes, however, which dwell in trees and often assume a vertical posture, the average distance

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(35) from the heart to the head can be as little as 15 percent of overall body length. Such a location requires that blood circulated to the tail of the snake travel a greater distance back to the heart, a problem solved by another adaptation. When climbing, arboreal snakes often pause momentarily to wiggle their bodies, causing waves of muscle contraction that advance from the lower torso to the head. By compressing the veins and forcing blood forward, these contractions apparently improve the flow of venous blood returning to the heart.

Questions 18–25 refer to the passage above.

18. The passage provides information in support of which of the following assertions?
- (A) The disadvantages of an adaptation to a particular feature of an environment often outweigh the advantages of such an adaptation.
  - (B) An organism's reaction to being placed in an environment to which it is not well adapted can sometimes illustrate the problems that have been solved by the adaptations of organisms indigenous to that environment.
  - (C) The effectiveness of an organism's adaptation to a particular feature of its environment can only be evaluated by examining the effectiveness with which organisms of other species have adapted to a similar feature of a different environment.
  - (D) Organisms of the same species that inhabit strikingly different environments will often adapt in remarkably similar ways to the few features of those environments that are common.
  - (E) Different species of organisms living in the same environment will seldom adapt to features of that environment in the same way.
19. According to the passage, one reason that the distribution of blood in the sea snake changes little while the creature remains in the ocean is that
- (A) the heart of the sea snake tends to be located near the center of its body
  - (B) pressure gradients in the water surrounding the sea snake counter the effects of vertical pressure gradients within its blood vessels
  - (C) the sea snake assumes a vertical posture less frequently than do the terrestrial and the arboreal snake
  - (D) the sea snake often relies on waves of muscle contractions to help move blood from the torso to the head
  - (E) the force of pressure gradients in the water surrounding the sea snake exceeds that of vertical pressure gradients within its circulatory system
20. It can be inferred from the passage that which of the following is true of species of terrestrial snakes that often need to assume a vertical posture?
- (A) They are more likely to be susceptible to circulatory failure in vertical postures than are sea snakes.
  - (B) Their hearts are less likely to be located at the midpoint of their bodies than is the case with sea snakes.
  - (C) They cannot counteract the pooling of blood in lower regions of their bodies as effectively as sea snakes can.
  - (D) The blood pressure at their midpoint decreases significantly when they are tilted with their heads up.
  - (E) They are unable to rely on muscle contractions to move venous blood from the lower torso to the head.

21. The author describes the behavior of the circulatory system of sea snakes when they are removed from the ocean (see lines 17–20) primarily in order to
- (A) illustrate what would occur in the circulatory system of terrestrial snakes without adaptations that enable them to regulate their blood pressure in vertical orientations
  - (B) explain why arboreal snakes in vertical orientations must rely on muscle contractions to restore blood pressure to the brain
  - (C) illustrate the effects of circulatory failure on the behavior of arboreal snakes
  - (D) illustrate the superiority of the circulatory system of the terrestrial snake to that of the sea snake
  - (E) explain how changes in spatial orientation can adversely affect the circulatory system of snakes with hearts located in relatively close proximity to their heads
22. It can be inferred from the passage that which of the following is a true statement about sea snakes?
- (A) They frequently rely on waves of muscle contractions from the lower torso to the head to supplement the work of the heart.
  - (B) They cannot effectively regulate their blood pressure when placed in seawater and tilted at an angle with the head pointed downward.
  - (C) They are more likely to have a heart located in close proximity to their heads than are arboreal snakes.
  - (D) They become acutely vulnerable to the effects of gravitational pressure on their circulatory system when they are placed in a terrestrial environment.
  - (E) Their cardiovascular system is not as complicated as that of arboreal snakes.
23. The author suggests that which of the following is a disadvantage that results from the location of a snake's heart in close proximity to its head?
- (A) A decrease in the efficiency with which the snake regulates the flow of blood to the brain
  - (B) A decrease in the number of orientations in space that a snake can assume without loss of blood flow to the brain
  - (C) A decrease in blood pressure at the snake's midpoint when it is tilted at various angles with its head up
  - (D) An increase in the tendency of blood to pool at the snake's head when the snake is tilted at various angles with its head down
  - (E) An increase in the amount of effort required to distribute blood to and from the snake's tail
24. The primary purpose of the third paragraph is to
- (A) introduce a topic that is not discussed earlier in the passage
  - (B) describe a more efficient method of achieving an effect discussed in the previous paragraph
  - (C) draw a conclusion based on information elaborated in the previous paragraph
  - (D) discuss two specific examples of phenomena mentioned at the end of the previous paragraph
  - (E) introduce evidence that undermines a view reported earlier in the passage



25. In the passage, the author is primarily concerned with doing which of the following?

- (A) Explaining adaptations that enable the terrestrial snake to cope with the effects of gravitational pressure on its circulatory system
- (B) Comparing the circulatory system of the sea snake with that of the terrestrial snake
- (C) Explaining why the circulatory system of the terrestrial snake is different from that of the sea snake
- (D) Pointing out features of the terrestrial snake's cardiovascular system that make it superior to that of the sea snake
- (E) Explaining how the sea snake is able to neutralize the effects of gravitational pressure on its circulatory system

Line  
 manufacturing as the main product of the United  
 States economy. But what is meant by "services"?  
 Some economists define a service as something  
 that is produced and consumed simultaneously, for  
 example, a haircut. The broader, classical definition  
 is that a service is an intangible something that  
 cannot be touched or stored. Yet electric utilities  
 can store energy, and computer programmers  
 (10) save information electronically. Thus, the classical  
 definition is hard to sustain.  
 The United States government's definition is  
 more practical: services are the residual category  
 that includes everything that is not agriculture or  
 industry. Under this definition, services includes  
 (15) activities as diverse as engineering and driving a  
 bus. However, besides lacking a strong conceptual  
 framework, this definition fails to recognize the  
 distinction between service industries and service  
 (20) occupations. If categories workers based on their  
 company's final product rather than on the actual  
 work the employees perform. Thus, the many  
 service workers employed by manufacturers—  
 bookkeepers or janitors, for example—would  
 (25) fall under the industrial rather than the services  
 category. Such ambiguities reveal the arbitrariness  
 of this definition and suggest that, although  
 practical for government purposes, it does not  
 accurately reflect the composition of the current  
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(30) United States economy.

Questions 26–30 refer to the passage above.

26. The author of the passage is primarily concerned with
  - (A) discussing research data underlying several definitions
  - (B) arguing for the adoption of a particular definition
  - (C) exploring definitions of a concept
  - (D) comparing the advantages of several definitions
  - (E) clarifying some ambiguous definitions
27. In comparing the United States government’s definition of services with the classical definition, the author suggests that the classical definition is
  - (A) more pragmatic
  - (B) more difficult to apply
  - (C) less ambiguous
  - (D) more widely used
  - (E) more arbitrary
28. The passage suggests which of the following about service workers in the United States?
  - (A) The number of service workers may be underestimated by the definition of services used by the government.
  - (B) There were fewer service workers than agricultural workers before 1988.
  - (C) The number of service workers was almost equal to the number of workers employed in manufacturing until 1988.
  - (D) Most service workers are employed in service occupations rather than in service industries.
  - (E) Most service workers are employed in occupations where they provide services that do not fall under the classical definition of services.

29. The author of the passage mentions which of the following as one disadvantage of the United States government's definition of services?
- (A) It is less useful than the other definitions mentioned in the passage.
  - (B) It is narrower in scope than the other definitions mentioned in the passage.
  - (C) It is based on the final product produced rather than on the type of work performed.
  - (D) It does not recognize the diversity of occupations within the service industries.
  - (E) It misclassifies many workers who are employed in service industries.
30. The author refers to "service workers employed by manufacturers" (line 23) primarily in order to point out
- (A) a type of worker not covered by the United States government's system of classifying occupations
  - (B) a flaw in the United States government's definition of services
  - (C) a factor that has influenced the growth of the service economy in the United States
  - (D) a type of worker who is classified on the basis of work performed rather than on the basis of the company's final product
  - (E) the diversity of the workers who are referred to as service workers

Line  
 Current feminist theory, in validating women's own  
 stories of their experience, has encouraged scholars  
 of women's history to view the use of women's oral  
 narratives as the methodology, next to the use of  
 women's written autobiography, that brings historians  
 closest to the "reality" of women's lives. Such  
 narratives, unlike most standard histories, represent  
 experience from the perspective of women, affirm  
 the importance of women's contributions, and furnish  
 present-day women with historical continuity that is  
 essential to their identity, individually and collectively.  
 Scholars of women's history should, however, be  
 as cautious about accepting oral narratives as face  
 value as they already are about written memories.  
 Oral narratives are no more likely than are written  
 narratives to provide a disinterested commentary on  
 events or people. Moreover, the stories people tell to  
 explain themselves are shaped by narrative devices  
 and storytelling conventions, as well as by other  
 cultural and historical factors, in ways that the  
 storytellers may be unaware of. The political rhetoric  
 of a particular era, for example, may influence  
 women's interpretations of the significance of their  
 experience. Thus a woman who views the Second  
 World War as pivotal in increasing the social  
 acceptance of women's paid work outside the home  
 may reach that conclusion partly and unwittingly  
 because of wartime rhetoric encouraging a positive  
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- Line Current feminist theory, in validating women's own stories of their experience, has encouraged scholars of women's history to view the use of women's oral narratives as the methodology, next to the use of
- (5) women's written autobiography, that brings historians closest to the "reality" of women's lives. Such narratives, unlike most standard histories, represent experience from the perspective of women, affirm the importance of women's contributions, and furnish
- (10) present-day women with historical continuity that is essential to their identity, individually and collectively.

Scholars of women's history should, however, be as cautious about accepting oral narratives at face value as they already are about written memories.

- (15) Oral narratives are no more likely than are written narratives to provide a disinterested commentary on events or people. Moreover, the stories people tell to explain themselves are shaped by narrative devices and storytelling conventions, as well as by other
- (20) cultural and historical factors, in ways that the storytellers may be unaware of. The political rhetoric of a particular era, for example, may influence women's interpretations of the significance of their experience. Thus a woman who views the Second
- (25) World War as pivotal in increasing the social acceptance of women's paid work outside the home may reach that conclusion partly and unwittingly because of wartime rhetoric encouraging a positive view of women's participation in such work.

Questions 31–36 refer to the passage above.

31. The passage is primarily concerned with
- (A) contrasting the benefits of one methodology with the benefits of another
  - (B) describing the historical origins and inherent drawbacks of a particular methodology
  - (C) discussing the appeal of a particular methodology and some concerns about its use
  - (D) showing that some historians' adoption of a particular methodology has led to criticism of recent historical scholarship
  - (E) analyzing the influence of current feminist views on women's interpretations of their experience
32. According to the passage, which of the following shapes the oral narratives of women storytellers?
- (A) The conventions for standard histories in the culture in which a woman storyteller lives
  - (B) The conventions of storytelling in the culture in which a woman storyteller lives
  - (C) A woman storyteller's experience with distinctive traditions of storytelling developed by the women in her family of origin
  - (D) The cultural expectations and experiences of those who listen to oral narratives
  - (E) A woman storyteller's familiarity with the stories that members of other groups in her culture tell to explain themselves

33. The author of the passage would be most likely to make which of the following recommendations to scholars of women's history?
- (A) They should take into account their own life experiences when interpreting the oral accounts of women's historical experiences.
  - (B) They should assume that the observations made in women's oral narratives are believed by the intended audience of the story.
  - (C) They should treat skeptically observations reported in oral narratives unless the observations can be confirmed in standard histories.
  - (D) They should consider the cultural and historical context in which an oral narrative was created before arriving at an interpretation of such a narrative.
  - (E) They should rely on information gathered from oral narratives only when equivalent information is not available in standard histories.
34. Which of the following best describes the function of the last sentence of the passage?
- (A) It describes an event that historians view as crucial in recent women's history.
  - (B) It provides an example of how political rhetoric may influence the interpretations of experience reported in women's oral narratives.
  - (C) It provides an example of an oral narrative that inaccurately describes women's experience during a particular historical period.
  - (D) It illustrates the point that some women are more aware than others of the social forces that shape their oral narratives.
  - (E) It identifies the historical conditions that led to the social acceptance of women's paid work outside the home.
35. According to the passage, scholars of women's history should refrain from doing which of the following?
- (A) Relying on traditional historical sources when women's oral narratives are unavailable
  - (B) Focusing on the influence of political rhetoric on women's perceptions to the exclusion of other equally important factors
  - (C) Attempting to discover the cultural and historical factors that influence the stories women tell
  - (D) Assuming that the conventions of women's written autobiographies are similar to the conventions of women's oral narratives
  - (E) Accepting women's oral narratives less critically than they accept women's written histories
36. According to the passage, each of the following is a difference between women's oral narratives and most standard histories EXCEPT:
- (A) Women's oral histories validate the significance of women's achievements.
  - (B) Women's oral histories depict experience from the point of view of women.
  - (C) Women's oral histories acknowledge the influence of well-known women.
  - (D) Women's oral histories present today's women with a sense of their historical relationship to women of the past.
  - (E) Women's oral histories are crucial to the collective identity of today's women.

- Line Manufacturers have to do more than build large manufacturing plants to realize economies of scale. It is true that as the capacity of a manufacturing operation rises, costs per unit of output fall as plant size approaches “minimum efficient scale,” where the cost per unit of output reaches a minimum, determined roughly by the state of existing technology and size of the potential market. However, minimum efficient scale cannot be fully realized unless a steady “throughput” (the flow of materials through a plant) is attained. The throughput needed to maintain the optimal scale of production requires careful coordination not only of the flow of goods through the production process, but also of the flow of input from suppliers and the flow of output to wholesalers and final consumers. If throughput falls below a critical point, unit costs rise sharply and profits disappear. A manufacturer’s fixed costs and “sunk costs” (original capital investment in the physical plant) do not decrease when production declines due to inadequate supplies of raw materials, problems on the factory floor, or inefficient sales networks. Consequently, potential economies of scale are based on the physical and engineering characteristics of the production facilities—that is, on tangible capital—but realized economies of scale are operational and organizational, and depend on knowledge, skills, experience, and teamwork—that is, on organized human capabilities, or intangible capital.
- The importance of investing in intangible capital becomes obvious when one looks at what happens in new capital-intensive manufacturing industries. Such industries are quickly dominated, not by the first firms to acquire technologically sophisticated plants of theoretically optimal size, but rather by the first to exploit the full potential of such plants. Once some firms achieve this, a market becomes extremely hard to enter. Challengers must construct comparable plants and do so after the first movers have already worked out problems with suppliers or with new production processes. Challengers must create distribution networks and marketing systems in markets where first movers have all the contacts and know-how. And challengers must recruit management teams to compete with those that have already mastered these functional and strategic activities.

Questions 37–41 refer to the passage above.

37. The passage suggests that in order for a manufacturer in a capital-intensive industry to have a decisive advantage over competitors making similar products, the manufacturer must
- (A) be the first in the industry to build production facilities of theoretically optimal size
  - (B) make every effort to keep fixed and sunk costs as low as possible
  - (C) be one of the first to operate its manufacturing plants at minimum efficient scale
  - (D) produce goods of higher quality than those produced by direct competitors
  - (E) stockpile raw materials at production sites in order to ensure a steady flow of such materials
38. The passage suggests that which of the following is true of a manufacturer’s fixed and sunk costs?
- (A) The extent to which they are determined by market conditions for the goods being manufactured is frequently underestimated.
  - (B) If they are kept as low as possible, the manufacturer is very likely to realize significant profits.
  - (C) They are the primary factor that determines whether a manufacturer will realize economies of scale.
  - (D) They should be on a par with the fixed and sunk costs of the manufacturer’s competitors.
  - (E) They are not affected by fluctuations in a manufacturing plant’s throughput.
39. In the context of the passage as a whole, the second paragraph serves primarily to
- (A) provide an example to support the argument presented in the first paragraph
  - (B) evaluate various strategies discussed in the first paragraph
  - (C) introduce evidence that undermines the argument presented in the first paragraph
  - (D) anticipate possible objections to the argument presented in the first paragraph
  - (E) demonstrate the potential dangers of a commonly used strategy



40. The passage LEAST supports the inference that a manufacturer's throughput could be adversely affected by
- (A) a mistake in judgment regarding the selection of a wholesaler
  - (B) a breakdown in the factory's machinery
  - (C) a labor dispute on the factory floor
  - (D) an increase in the cost per unit of output
  - (E) a drop in the efficiency of the sales network
41. The primary purpose of the passage is to
- (A) point out the importance of intangible capital for realizing economies of scale in manufacturing
  - (B) show that manufacturers frequently gain a competitive advantage from investment in large manufacturing facilities
  - (C) argue that large manufacturing facilities often fail because of inadequate investment in both tangible and intangible capital
  - (D) suggest that most new industries are likely to be dominated by firms that build large manufacturing plants early
  - (E) explain why large manufacturing plants usually do not help manufacturers achieve economies of scale

Line  
 industry, women were employed primarily in low-  
 paying, low-skill jobs. To explain this segregation  
 of labor by gender, economists have relied on  
 the useful theory of human capital. According  
 (5) to this theory, investment in human capital—the  
 acquisition of difficult job-related skills—generally  
 benefits individuals by making them eligible to  
 engage in well-paid occupations. Women's role as  
 (10) child bearers, however, results in interruptions in  
 their participation in the job market (as compared  
 with men's) and thus reduces their opportunities  
 to acquire training for highly skilled work. In  
 addition, the human capital theory explains why  
 (15) there was a high concentration of women workers  
 in certain low-skill jobs, such as weaving, but not  
 in others, such as combing or carding, by positing  
 that because of their primary responsibility in child  
 rearing women took occupations that could be  
 (20) carried out in the home.  
 There were, however, differences in pay scales  
 that cannot be explained by the human capital  
 theory. For example, male construction workers  
 were paid significantly higher wages than female  
 (25) tailors and weavers. The wage difference between  
 these two low-skill occupations stems from the  
 segregation of labor by gender: because a limited  
 number of occupations were open to women, there  
 was a large supply of workers in their fields, and  
 (30) this "overcrowding" resulted in women receiving  
 lower wages and men receiving higher wages.

- Line In the seventeenth-century Florentine textile industry, women were employed primarily in low-paying, low-skill jobs. To explain this segregation of labor by gender, economists have relied on
- (5) the useful theory of human capital. According to this theory, investment in human capital—the acquisition of difficult job-related skills—generally benefits individuals by making them eligible to engage in well-paid occupations. Women’s role as
- (10) child bearers, however, results in interruptions in their participation in the job market (as compared with men’s) and thus reduces their opportunities to acquire training for highly skilled work. In addition, the human capital theory explains why
- (15) there was a high concentration of women workers in certain low-skill jobs, such as weaving, but not in others, such as combing or carding, by positing that because of their primary responsibility in child rearing women took occupations that could be
- (20) carried out in the home.

- There were, however, differences in pay scales that cannot be explained by the human capital theory. For example, male construction workers were paid significantly higher wages than female
- (25) taffeta weavers. The wage difference between these two low-skill occupations stems from the segregation of labor by gender: because a limited number of occupations were open to women, there was a large supply of workers in their fields, and
- (30) this “overcrowding” resulted in women receiving lower wages and men receiving higher wages.

Questions 42–44 refer to the passage above.

42. The passage suggests that combing and carding differ from weaving in that combing and carding were
- (A) low-skill jobs performed primarily by women employees
  - (B) low-skill jobs that were not performed in the home
  - (C) low-skill jobs performed by both male and female employees
  - (D) high-skill jobs performed outside the home
  - (E) high-skill jobs performed by both male and female employees
43. Which of the following, if true, would most weaken the explanation provided by the human capital theory for women’s concentration in certain occupations in seventeenth-century Florence?
- (A) Women were unlikely to work outside the home even in occupations whose hours were flexible enough to allow women to accommodate domestic tasks as well as paid labor.
  - (B) Parents were less likely to teach occupational skills to their daughters than they were to their sons.
  - (C) Women’s participation in the Florentine paid labor force grew steadily throughout the sixteenth and seventeenth centuries.
  - (D) The vast majority of female weavers in the Florentine wool industry had children.
  - (E) Few women worked as weavers in the Florentine silk industry, which was devoted to making cloths that required a high degree of skill to produce.

44. The author of the passage would be most likely to describe the explanation provided by the human capital theory for the high concentration of women in certain occupations in the seventeenth-century Florentine textile industry as

(A) well founded though incomplete  
 (B) difficult to articulate  
 (C) plausible but poorly substantiated  
 (D) seriously flawed  
 (E) contrary to recent research

46. According to the passage, which of the following is true of the "factors affecting employers" that are mentioned in lines 10-13?

(A) Most experts cite them as having initiated the growth in temporary employment that occurred during the 1980s.  
 (B) They may account for the increase in the total number of temporary workers during the 1980s.  
 (C) They were less important than demographic changes in accounting for the increase of temporary employment during the 1980s.  
 (D) They included a sharp increase in the cost of labor during the 1980s.  
 (E) They are more difficult to account for than are other factors involved in the growth of temporary employment during the 1980s.

(This passage was adapted from an article written in 1993.)

Line  
 Some observers have attributed the dramatic growth in temporary employment that occurred in the United States during the 1980s to increased participation in the workforce by certain groups, such as first-time or reentering workers, who supposedly prefer such arrangements. However, statistical analyses reveal that demographic changes in the workforce did not correlate with variations in the total number of temporary workers. Instead, these analyses suggest that factors affecting employers account for the rise in temporary employment. One factor is product demand: temporary employment is favored by employers who are adapting to fluctuating demand for products while at the same time seeking to reduce overall labor costs. Another factor is labor's reduced bargaining strength, which allows employers more control over the terms of employment. Given the analyses, which reveal that growth in temporary employment now far exceeds the level explainable by recent workforce entry rates of groups said to prefer temporary jobs, firms should be discouraged from creating excessive numbers of temporary positions. Government policymakers should consider mandating benefit coverage for temporary employees, promoting pay equity between temporary and permanent workers, assisting labor unions in organizing temporary workers, and encouraging firms to assign temporary jobs primarily to employees who explicitly indicate that preference.

(This passage was adapted from an article written in 1992.)

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- (25) policymakers should consider mandating benefit coverage for temporary employees, promoting pay equity between temporary and permanent workers, assisting labor unions in organizing temporary workers, and encouraging firms to assign temporary
- (30) jobs primarily to employees who explicitly indicate that preference.

Questions 45–51 refer to the passage above.

45. The primary purpose of the passage is to
- (A) present the results of statistical analyses and propose further studies
  - (B) explain a recent development and predict its eventual consequences
  - (C) identify the reasons for a trend and recommend measures to address it
  - (D) outline several theories about a phenomenon and advocate one of them
  - (E) describe the potential consequences of implementing a new policy and argue in favor of that policy
46. According to the passage, which of the following is true of the “factors affecting employers” that are mentioned in lines 10–19?
- (A) Most experts cite them as having initiated the growth in temporary employment that occurred during the 1980s.
  - (B) They may account for the increase in the total number of temporary workers during the 1980s.
  - (C) They were less important than demographic change in accounting for the increase of temporary employment during the 1980s.
  - (D) They included a sharp increase in the cost of labor during the 1980s.
  - (E) They are more difficult to account for than are other factors involved in the growth of temporary employment during the 1980s.

47. The passage suggests which of the following about the use of temporary employment by firms during the 1980s?
- (A) It enabled firms to deal with fluctuating product demand far more efficiently than they did before the 1980s.
  - (B) It increased as a result of increased participation in the workforce by certain demographic groups.
  - (C) It was discouraged by government-mandated policies.
  - (D) It was a response to preferences indicated by certain employees for more flexible working arrangements.
  - (E) It increased partly as a result of workers' reduced ability to control the terms of their employment.
48. The passage suggests which of the following about the workers who took temporary jobs during the 1980s?
- (A) Their jobs frequently led to permanent positions within firms.
  - (B) They constituted a less demographically diverse group than has been suggested.
  - (C) They were occasionally involved in actions organized by labor unions.
  - (D) Their pay declined during the decade in comparison with the pay of permanent employees.
  - (E) They did not necessarily prefer temporary employment to permanent employment.
49. The first sentence in the passage suggests that the "observers" mentioned in line 1 would be most likely to predict which of the following?
- (A) That the number of new temporary positions would decline as fewer workers who preferred temporary employment entered the workforce
  - (B) That the total number of temporary positions would increase as fewer workers were able to find permanent positions
  - (C) That employers would have less control over the terms of workers' employment as workers increased their bargaining strength
  - (D) That more workers would be hired for temporary positions as product demand increased
  - (E) That the number of workers taking temporary positions would increase as more workers in any given demographic group entered the workforce
50. In the context of the passage, the word "excessive" (line 23) most closely corresponds to which of the following phrases?
- (A) Far more than can be justified by worker preferences
  - (B) Far more than can be explained by fluctuations in product demand
  - (C) Far more than can be beneficial to the success of the firms themselves
  - (D) Far more than can be accounted for by an expanding national economy
  - (E) Far more than can be attributed to increases in the total number of people in the workforce
51. The passage mentions each of the following as an appropriate kind of governmental action EXCEPT
- (A) getting firms to offer temporary employment primarily to a certain group of people
  - (B) encouraging equitable pay for temporary and permanent employees
  - (C) facilitating the organization of temporary workers by labor unions
  - (D) establishing guidelines on the proportion of temporary workers that firms should employ
  - (E) ensuring that temporary workers obtain benefits from their employers

- Line Among the myths taken as fact by the environmental managers of most corporations is the belief that environmental regulations affect all competitors in a given industry uniformly. In reality, regulatory costs—and therefore compliance—fall unevenly, economically disadvantaging some companies and benefiting others. For example, a plant situated near a number of larger noncompliant competitors is less likely to attract the attention of local regulators than is an isolated plant, and less attention means lower costs. Additionally, large plants can spread compliance costs such as waste treatment across a larger revenue base; on the other hand, some smaller plants may not even be subject to certain provisions such as permit or reporting requirements by virtue of their size. Finally, older production technologies often continue to generate toxic wastes that were not regulated when the technology was first adopted. New regulations have imposed extensive compliance costs on companies still using older industrial coal-fired burners that generate high sulfur dioxide and nitrogen oxide outputs, for example, whereas new facilities generally avoid processes that would create such waste products. By realizing that they have discretion and that not all industries are affected equally by environmental regulation, environmental managers can help their companies to achieve a competitive edge by anticipating regulatory pressure and exploring all possibilities for addressing how changing regulations will affect their companies specifically.

Questions 52–55 refer to the passage above.

52. It can be inferred from the passage that a large plant might have to spend more than a similar but smaller plant on environmental compliance because the larger plant is
- (A) more likely to attract attention from local regulators
  - (B) less likely to be exempt from permit and reporting requirements
  - (C) less likely to have regulatory costs passed on to it by companies that supply its raw materials
  - (D) more likely to employ older production technologies
  - (E) more likely to generate wastes that are more environmentally damaging than those generated by smaller plants
53. According to the passage, which of the following statements about sulfur dioxide and nitrogen oxide outputs is true?
- (A) Older production technologies cannot be adapted so as to reduce production of these outputs as waste products.
  - (B) Under the most recent environmental regulations, industrial plants are no longer permitted to produce these outputs.
  - (C) Although these outputs are environmentally hazardous, some plants still generate them as waste products despite the high compliance costs they impose.
  - (D) Many older plants have developed innovative technological processes that reduce the amounts of these outputs generated as waste products.
  - (E) Since the production processes that generate these outputs are less costly than alternative processes, these less expensive processes are sometimes adopted despite their acknowledged environmental hazards.



54. Which of the following best describes the relationship of the statement about large plants (lines 12–17) to the passage as a whole?
- (A) It presents a hypothesis that is disproved later in the passage.
  - (B) It highlights an opposition between two ideas mentioned in the passage.
  - (C) It provides examples to support a claim made earlier in the passage.
  - (D) It exemplifies a misconception mentioned earlier in the passage.
  - (E) It draws an analogy between two situations described in the passage.
55. The primary purpose of the passage is to
- (A) address a widespread environmental management problem and suggest possible solutions
  - (B) illustrate varying levels of compliance with environmental regulation among different corporations
  - (C) describe the various alternatives to traditional methods of environmental management
  - (D) advocate increased corporate compliance with environmental regulation
  - (E) correct a common misconception about the impact of environmental regulations

Line  
 Court held that the right to use waters flowing through  
 or adjacent to the Fort Belknap Indian Reservation  
 was reserved to American Indians by the treaty  
 establishing the reservation. Although this treaty did  
 not mention water rights, the Court ruled that the  
 federal government, when it created the reservation,  
 intended to deal fairly with American Indians by  
 reserving for them the waters without which their  
 lands would have been useless. Later decisions, citing  
 Winters, established that courts can find federal rights  
 to reserve water for particular purposes if (1) the land  
 in question lies within an enclave under exclusive  
 federal jurisdiction, (2) the land has been formally  
 withdrawn from federal public lands—i.e., withdrawn  
 from the stock of federal lands available for private  
 use under federal land use laws—and set aside or  
 reserved, and (3) the circumstances reveal the  
 government intended to reserve water as well as land  
 when establishing the reservation.

(20) Some American Indian tribes have also established  
 water rights through the courts based on their  
 traditional diversion and use of certain waters prior to  
 the United States' acquisition of sovereignty. For  
 example, the Rio Grande pueblos already existed when  
 the United States acquired sovereignty over New  
 Mexico in 1848. Although they at that time became  
 part of the United States, the pueblo lands never  
 formally constituted a part of federal public lands; in  
 any event, no treaty, statute, or executive order has  
 ever designated or withdrawn the pueblos from public  
 lands as American Indian reservations. This fact,  
 however, has not barred application of the Winters  
 doctrine. What constitutes an American Indian  
 reservation is a question of practice, not of legal  
 definition, and the pueblos have always been treated  
 as reservations by the United States. This pragmatic  
 approach is buttressed by Arizona v. California (1963),  
 wherein the Supreme Court indicated that the manner  
 in which any type of federal reservation is created  
 does not affect the application to it of the Winters  
 doctrine. Therefore, the reserved water rights of  
 Pueblo Indians have priority over other citizens' water  
 rights as of 1848, the year in which pueblos must be  
 considered to have become reservations.

Line In *Winters v. United States* (1908), the Supreme Court held that the right to use waters flowing through or adjacent to the Fort Belknap Indian Reservation was reserved to American Indians by the treaty

(5) establishing the reservation. Although this treaty did not mention water rights, the Court ruled that the federal government, when it created the reservation, intended to deal fairly with American Indians by reserving for them the waters without which their

(10) lands would have been useless. Later decisions, citing *Winters*, established that courts can find federal rights to reserve water for particular purposes if (1) the land in question lies within an enclave under exclusive federal jurisdiction, (2) the land has been formally

(15) withdrawn from federal public lands—i.e., withdrawn from the stock of federal lands available for private use under federal land use laws—and set aside or reserved, and (3) the circumstances reveal the government intended to reserve water as well as land

(20) when establishing the reservation.

Some American Indian tribes have also established water rights through the courts based on their traditional diversion and use of certain waters prior to the United States' acquisition of sovereignty. For

(25) example, the Rio Grande pueblos already existed when the United States acquired sovereignty over New Mexico in 1848. Although they at that time became part of the United States, the pueblo lands never formally constituted a part of federal public lands; in

(30) any event, no treaty, statute, or executive order has ever designated or withdrawn the pueblos from public lands as American Indian reservations. This fact, however, has not barred application of the *Winters* doctrine. What constitutes an American Indian

(35) reservation is a question of practice, not of legal definition, and the pueblos have always been treated as reservations by the United States. This pragmatic approach is buttressed by *Arizona v. California* (1963), wherein the Supreme Court indicated that the manner

(40) in which any type of federal reservation is created does not affect the application to it of the *Winters* doctrine. Therefore, the reserved water rights of Pueblo Indians have priority over other citizens' water rights as of 1848, the year in which pueblos must be

(45) considered to have become reservations.

Questions 56–62 refer to the passage above.

56. According to the passage, which of the following was true of the treaty establishing the Fort Belknap Indian Reservation?
- (A) It was challenged in the Supreme Court a number of times.
  - (B) It was rescinded by the federal government, an action that gave rise to the *Winters* case.
  - (C) It cited American Indians' traditional use of the land's resources.
  - (D) It failed to mention water rights to be enjoyed by the reservation's inhabitants.
  - (E) It was modified by the Supreme Court in *Arizona v. California*.
57. The passage suggests that, if the criteria discussed in lines 10–20 were the only criteria for establishing a reservation's water rights, which of the following would be true?
- (A) The water rights of the inhabitants of the Fort Belknap Indian Reservation would not take precedence over those of other citizens.
  - (B) Reservations established before 1848 would be judged to have no water rights.
  - (C) There would be no legal basis for the water rights of the Rio Grande pueblos.
  - (D) Reservations other than American Indian reservations could not be created with reserved water rights.
  - (E) Treaties establishing reservations would have to mention water rights explicitly in order to reserve water for a particular purpose.

58. Which of the following most accurately summarizes the relationship between *Arizona v. California* in lines 38–42, and the criteria citing the *Winters* doctrine in lines 10–20?
- (A) *Arizona v. California* abolishes these criteria and establishes a competing set of criteria for applying the *Winters* doctrine.
  - (B) *Arizona v. California* establishes that the *Winters* doctrine applies to a broader range of situations than those defined by these criteria.
  - (C) *Arizona v. California* represents the sole example of an exception to the criteria as they were set forth in the *Winters* doctrine.
  - (D) *Arizona v. California* does not refer to the *Winters* doctrine to justify water rights, whereas these criteria do rely on the *Winters* doctrine.
  - (E) *Arizona v. California* applies the criteria derived from the *Winters* doctrine only to federal lands other than American Indian reservations.
59. The “pragmatic approach” mentioned in lines 37–38 of the passage is best defined as one that
- (A) grants recognition to reservations that were never formally established but that have traditionally been treated as such
  - (B) determines the water rights of all citizens in a particular region by examining the actual history of water usage in that region
  - (C) gives federal courts the right to reserve water along with land even when it is clear that the government originally intended to reserve only the land
  - (D) bases the decision to recognize the legal rights of a group on the practical effect such a recognition is likely to have on other citizens
  - (E) dictates that courts ignore precedents set by such cases as *Winters v. United States* in deciding what water rights belong to reserved land
60. The author cites the fact that the Rio Grande pueblos were never formally withdrawn from public lands primarily in order to do which of the following?
- (A) Suggest why it might have been argued that the *Winters* doctrine ought not to apply to pueblo lands
  - (B) Imply that the United States never really acquired sovereignty over pueblo lands
  - (C) Argue that the pueblo lands ought still to be considered part of federal public lands
  - (D) Support the argument that the water rights of citizens other than American Indians are limited by the *Winters* doctrine
  - (E) Suggest that federal courts cannot claim jurisdiction over cases disputing the traditional diversion and use of water by Pueblo Indians
61. The primary purpose of the passage is to
- (A) trace the development of laws establishing American Indian reservations
  - (B) explain the legal basis for the water rights of American Indian tribes
  - (C) question the legal criteria often used to determine the water rights of American Indian tribes
  - (D) discuss evidence establishing the earliest date at which the federal government recognized the water rights of American Indians
  - (E) point out a legal distinction between different types of American Indian reservations
62. The passage suggests that the legal rights of citizens other than American Indians to the use of water flowing into the Rio Grande pueblos are
- (A) guaranteed by the precedent set in *Arizona v. California*
  - (B) abolished by the *Winters* doctrine
  - (C) deferred to the Pueblo Indians whenever treaties explicitly require this
  - (D) guaranteed by federal land-use laws
  - (E) limited by the prior claims of the Pueblo Indians

Line Milankovitch proposed in the early twentieth century that the ice ages were caused by variations in the Earth's orbit around the Sun. For some time this theory was considered untestable, (5) largely because there was no sufficiently precise chronology of the ice ages with which the orbital variations could be matched.

To establish such a chronology it is necessary to determine the relative amounts of land ice that (10) existed at various times in the Earth's past. A recent discovery makes such a determination possible: relative land-ice volume for a given period can be deduced from the ratio of two oxygen isotopes, 16 and 18, found in ocean sediments. Almost (15) all the oxygen in water is oxygen 16, but a few molecules out of every thousand incorporate the heavier isotope 18. When an ice age begins, the continental ice sheets grow, steadily reducing the amount of water evaporated from the ocean that (20) will eventually return to it. Because heavier isotopes tend to be left behind when water evaporates from the ocean surfaces, the remaining ocean water becomes progressively enriched in oxygen 18. The degree of enrichment can be determined (25) by analyzing ocean sediments of the period, because these sediments are composed of calcium carbonate shells of marine organisms, shells that were constructed with oxygen atoms drawn from the surrounding ocean. The higher the ratio of (30) oxygen 18 to oxygen 16 in a sedimentary specimen, the more land ice there was when the sediment was laid down.

As an indicator of shifts in the Earth's climate, the isotope record has two advantages. First, it is (35) a global record: there is remarkably little variation in isotope ratios in sedimentary specimens taken from different continental locations. Second, it is a more continuous record than that taken from rocks on land. Because of these advantages, (40) sedimentary evidence can be dated with sufficient accuracy by radiometric methods to establish a precise chronology of the ice ages. The dated isotope record shows that the fluctuations in global ice volume over the past several hundred

(45) thousand years have a pattern: an ice age occurs roughly once every 100,000 years. These data have established a strong connection between variations in the Earth's orbit and the periodicity of the ice ages.

(50) However, it is important to note that other factors, such as volcanic particulates or variations in the amount of sunlight received by the Earth, could potentially have affected the climate. The advantage of the Milankovitch theory is that it (55) is testable; changes in the Earth's orbit can be calculated and dated by applying Newton's laws of gravity to progressively earlier configurations of the bodies in the solar system. Yet the lack of information about other possible factors affecting (60) global climate does not make them unimportant.

Questions 63–68 refer to the passage above.

63. In the passage, the author is primarily interested in
- (A) suggesting an alternative to an outdated research method
  - (B) introducing a new research method that calls an accepted theory into question
  - (C) emphasizing the instability of data gathered from the application of a new scientific method
  - (D) presenting a theory and describing a new method to test that theory
  - (E) initiating a debate about a widely accepted theory
64. The author of the passage would be most likely to agree with which of the following statements about the Milankovitch theory?
- (A) It is the only possible explanation for the ice ages.
  - (B) It is too limited to provide a plausible explanation for the ice ages, despite recent research findings.
  - (C) It cannot be tested and confirmed until further research on volcanic activity is done.
  - (D) It is one plausible explanation, though not the only one, for the ice ages.
  - (E) It is not a plausible explanation for the ice ages, although it has opened up promising possibilities for future research.

65. It can be inferred from the passage that the isotope record taken from ocean sediments would be less useful to researchers if which of the following were true?
- (A) It indicated that lighter isotopes of oxygen predominated at certain times.
  - (B) It had far more gaps in its sequence than the record taken from rocks on land.
  - (C) It indicated that climate shifts did not occur every 100,000 years.
  - (D) It indicated that the ratios of oxygen 16 and oxygen 18 in ocean water were not consistent with those found in fresh water.
  - (E) It stretched back for only a million years.
66. According to the passage, which of the following is true of the ratios of oxygen isotopes in ocean sediments?
- (A) They indicate that sediments found during an ice age contain more calcium carbonate than sediments formed at other times.
  - (B) They are less reliable than the evidence from rocks on land in determining the volume of land ice.
  - (C) They can be used to deduce the relative volume of land ice that was present when the sediment was laid down.
  - (D) They are more unpredictable during an ice age than in other climatic conditions.
  - (E) They can be used to determine atmospheric conditions at various times in the past.
67. It can be inferred from the passage that precipitation formed from evaporated ocean water has
- (A) the same isotopic ratio as ocean water
  - (B) less oxygen 18 than does ocean water
  - (C) less oxygen 18 than has the ice contained in continental ice sheets
  - (D) a different isotopic composition than has precipitation formed from water on land
  - (E) more oxygen 16 than has precipitation formed from fresh water
68. It can be inferred from the passage that calcium carbonate shells
- (A) are not as susceptible to deterioration as rocks
  - (B) are less common in sediments formed during an ice age
  - (C) are found only in areas that were once covered by land ice
  - (D) contain radioactive material that can be used to determine a sediment's isotopic composition
  - (E) reflect the isotopic composition of the water at the time the shells were formed



- Line Two works published in 1984 demonstrate contrasting approaches to writing the history of United States women. Buel and Buel's biography of Mary Fish (1736–1818) makes little effort to place
- (5) her story in the context of recent historiography on women. Lebsock, meanwhile, attempts not only to write the history of women in one southern community, but also to redirect two decades of historiographical debate as to whether women
- (10) gained or lost status in the nineteenth century as compared with the eighteenth century. Although both books offer the reader the opportunity to assess this controversy regarding women's status, only Lebsock's deals with it directly. She examines
- (15) several different aspects of women's status, helping to refine and resolve the issues. She concludes that while women gained autonomy in some areas, especially in the private sphere, they lost it in many aspects of the economic sphere. More importantly,
- (20) she shows that the debate itself depends on frame of reference: in many respects, women lost power in relation to men, for example, as certain jobs (delivering babies, supervising schools) were taken over by men. Yet women also gained power in
- (25) comparison with their previous status, owning a higher proportion of real estate, for example. In contrast, Buel and Buel's biography provides ample raw material for questioning the myth, fostered by some historians, of a colonial golden age in the
- (30) eighteenth century but does not give the reader much guidance in analyzing the controversy over women's status.

Questions 69–74 refer to the passage above.

69. The primary purpose of the passage is to
- (A) examine two sides of a historiographical debate
  - (B) call into question an author's approach to a historiographical debate
  - (C) examine one author's approach to a historiographical debate
  - (D) discuss two authors' works in relationship to a historiographical debate
  - (E) explain the prevalent perspective on a historiographical debate
70. The author of the passage mentions the supervision of schools primarily in order to
- (A) remind readers of the role education played in the cultural changes of the nineteenth century in the United States
  - (B) suggest an area in which nineteenth-century American women were relatively free to exercise power
  - (C) provide an example of an occupation for which accurate data about women's participation are difficult to obtain
  - (D) speculate about which occupations were considered suitable for United States women of the nineteenth century
  - (E) illustrate how the answers to questions about women's status depend on particular contexts



71. With which of the following characterizations of Lebsock's contribution to the controversy concerning women's status in the nineteenth-century United States would the author of the passage be most likely to agree?
- (A) Lebsock has studied women from a formerly neglected region and time period.
  - (B) Lebsock has demonstrated the importance of frame of reference in answering questions about women's status.
  - (C) Lebsock has addressed the controversy by using women's current status as a frame of reference.
  - (D) Lebsock has analyzed statistics about occupations and property that were previously ignored.
  - (E) Lebsock has applied recent historiographical methods to the biography of a nineteenth-century woman.
72. According to the passage, Lebsock's work differs from Buel and Buel's work in that Lebsock's work
- (A) uses a large number of primary sources
  - (B) ignores issues of women's legal status
  - (C) refuses to take a position on women's status in the eighteenth century
  - (D) addresses larger historiographical issues
  - (E) fails to provide sufficient material to support its claims
73. The passage suggests that Lebsock believes that compared to nineteenth-century American women, eighteenth-century American women were
- (A) in many respects less powerful in relation to men
  - (B) more likely to own real estate
  - (C) generally more economically independent
  - (D) more independent in conducting their private lives
  - (E) less likely to work as school superintendents
74. The passage suggests that Buel and Buel's biography of Mary Fish provides evidence for which of the following views of women's history?
- (A) Women have lost power in relation to men since the colonial era.
  - (B) Women of the colonial era were not as likely to be concerned with their status as were women in the nineteenth century.
  - (C) The colonial era was not as favorable for women as some historians have believed.
  - (D) Women had more economic autonomy in the colonial era than in the nineteenth century.
  - (E) Women's occupations were generally more respected in the colonial era than in the nineteenth century.

Line It was once believed that the brain was  
independent of metabolic processes occurring  
elsewhere in the body. In recent studies, however,  
we have discovered that the production and release  
(5) in brain neurons of the neurotransmitter serotonin  
(neurotransmitters are compounds that neurons use  
to transmit signals to other cells) depend directly on  
the food that the body processes.

Our first studies sought to determine whether  
(10) the increase in serotonin observed in rats given  
a large injection of the amino acid tryptophan  
might also occur after rats ate meals that change  
tryptophan levels in the blood. We found that,  
immediately after the rats began to eat, parallel  
(15) elevations occurred in blood tryptophan, brain  
tryptophan, and brain serotonin levels. These  
findings suggested that the production and release  
of serotonin in brain neurons were normally coupled  
with blood-tryptophan increases. In later studies we  
(20) found that injecting insulin into a rat's bloodstream  
also caused parallel elevations in blood and brain  
tryptophan levels and in serotonin levels. We then  
decided to see whether the secretion of the animal's  
own insulin similarly affected serotonin production.  
(25) We gave the rats a carbohydrate-containing meal  
that we knew would elicit insulin secretion. As we  
had hypothesized, the blood tryptophan level and  
the concentrations of tryptophan and of serotonin  
in the brain increased after the meal.  
(30) Surprisingly, however, when we added a large  
amount of protein to the meal, brain tryptophan  
and serotonin levels fell. Since protein contains  
tryptophan, why should it depress brain tryptophan  
levels? The answer lies in the mechanism that  
(35) provides blood tryptophan to the brain cells. This  
same mechanism also provides the brain cells with  
other amino acids found in protein, such as tyrosine  
and leucine. The consumption of protein increases  
blood concentration of the other amino acids much  
(40) more, proportionately, than it does that of tryptophan.  
The more protein is in a meal, the lower is the ratio  
of the resulting blood-tryptophan concentration to  
the concentration of competing amino acids, and  
the more slowly is tryptophan provided to the brain.  
(45) Thus the more protein in a meal, the less serotonin  
subsequently produced and released.

Questions 75–83 refer to the passage above.

75. Which of the following titles best summarizes the contents of the passage?
- (A) Neurotransmitters: Their Crucial Function in Cellular Communication
  - (B) Diet and Survival: An Old Relationship Reexamined
  - (C) The Blood Supply and the Brain: A Reciprocal Dependence
  - (D) Amino Acids and Neurotransmitters: The Connection between Serotonin Levels and Tyrosine
  - (E) The Effects of Food Intake on the Production and Release of Serotonin: Some Recent Findings
76. According to the passage, the speed with which tryptophan is provided to the brain cells of a rat varies with the
- (A) amount of protein present in a meal
  - (B) concentration of serotonin in the brain before a meal
  - (C) concentration of leucine in the blood rather than with the concentration of tyrosine in the blood after a meal
  - (D) concentration of tryptophan in the brain before a meal
  - (E) number of serotonin-containing neurons
77. According to the passage, when the authors began their first studies, they were aware that
- (A) they would eventually need to design experiments that involved feeding rats high concentrations of protein
  - (B) tryptophan levels in the blood were difficult to monitor with accuracy
  - (C) serotonin levels increased after rats were fed meals rich in tryptophan
  - (D) there were many neurotransmitters whose production was dependent on metabolic processes elsewhere in the body
  - (E) serotonin levels increased after rats were injected with a large amount of tryptophan

78. According to the passage, one reason that the authors gave rats carbohydrates was to
- (A) depress the rats' tryptophan levels
  - (B) prevent the rats from contracting diseases
  - (C) cause the rats to produce insulin
  - (D) demonstrate that insulin is the most important substance secreted by the body
  - (E) compare the effect of carbohydrates with the effect of proteins
79. According to the passage, the more protein a rat consumes, the lower will be the
- (A) ratio of the rat's blood-tryptophan concentration to the amount of serotonin produced and released in the rat's brain
  - (B) ratio of the rat's blood-tryptophan concentration to the concentration in its blood of the other amino acids contained in the protein
  - (C) ratio of the rat's blood-tyrosine concentration to its blood-leucine concentration
  - (D) number of neurotransmitters of any kind that the rat will produce and release
  - (E) number of amino acids the rat's blood will contain
80. The authors' discussion of the "mechanism that provides blood tryptophan to the brain cells" (lines 34–35) is meant to
- (A) stimulate further research studies
  - (B) summarize an area of scientific investigation
  - (C) help explain why a particular research finding was obtained
  - (D) provide supporting evidence for a controversial scientific theory
  - (E) refute the conclusions of a previously mentioned research study
81. According to the passage, an injection of insulin was most similar in its effect on rats to an injection of
- (A) tyrosine
  - (B) leucine
  - (C) blood
  - (D) tryptophan
  - (E) protein
82. It can be inferred from the passage that which of the following would be LEAST likely to be a potential source of aid to a patient who was not adequately producing and releasing serotonin?
- (A) Meals consisting almost exclusively of protein
  - (B) Meals consisting almost exclusively of carbohydrates
  - (C) Meals that would elicit insulin secretion
  - (D) Meals that had very low concentrations of tyrosine
  - (E) Meals that had very low concentrations of leucine
83. It can be inferred from the passage that the authors initially held which of the following hypotheses about what would happen when they fed large amounts of protein to rats?
- (A) The rats' brain serotonin levels would not decrease.
  - (B) The rats' brain tryptophan levels would decrease.
  - (C) The rats' tyrosine levels would increase less quickly than would their leucine levels.
  - (D) The rats would produce more insulin.
  - (E) The rats would produce neurotransmitters other than serotonin.

- Line Acting on the recommendation of a British government committee investigating the high incidence in white lead factories of illness among employees, most of whom were women, the Home Secretary proposed in 1895 that Parliament enact legislation that would prohibit women from holding most jobs in white lead factories. Although the Women's Industrial Defence Committee (WIDC), formed in 1892 in response to earlier legislative attempts to restrict women's labor, did not discount the white lead trade's potential health dangers, it opposed the proposal, viewing it as yet another instance of limiting women's work opportunities. Also opposing the proposal was the Society for Promoting the Employment of Women (SPEW), which attempted to challenge it by investigating the causes of illness in white lead factories. SPEW contended, and WIDC concurred, that controllable conditions in such factories were responsible for the development of lead poisoning. SPEW provided convincing evidence that lead poisoning could be avoided if workers were careful and clean and if already extant workplace safety regulations were stringently enforced. However, the Women's Trade Union League (WTUL), which had ceased in the late 1880s to oppose restrictions on women's labor, supported the eventually enacted proposal, in part because safety regulations were generally not being enforced in white lead factories, where there were no unions (and little prospect of any) to pressure employers to comply with safety regulations.

Questions 84–86 refer to the passage above.

84. The passage suggests that WIDC differed from WTUL in which of the following ways?
- (A) WIDC believed that the existing safety regulations were adequate to protect women's health, whereas WTUL believed that such regulations needed to be strengthened.
  - (B) WIDC believed that unions could not succeed in pressuring employers to comply with such regulations, whereas WTUL believed that unions could succeed in doing so.
  - (C) WIDC believed that lead poisoning in white lead factories could be avoided by controlling conditions there, whereas WTUL believed that lead poisoning in such factories could not be avoided no matter how stringently safety regulations were enforced.
  - (D) At the time that the legislation concerning white lead factories was proposed, WIDC was primarily concerned with addressing health conditions in white lead factories, whereas WTUL was concerned with improving working conditions in all types of factories.
  - (E) At the time that WIDC was opposing legislative attempts to restrict women's labor, WTUL had already ceased to do so.

85. Which of the following, if true, would most clearly support the contention attributed to SPEW in lines 17–20?
- (A) Those white lead factories that most strongly enforced regulations concerning worker safety and hygiene had the lowest incidences of lead poisoning among employees.
  - (B) The incidence of lead poisoning was much higher among women who worked in white lead factories than among women who worked in other types of factories.
  - (C) There were many household sources of lead that could have contributed to the incidence of lead poisoning among women who also worked outside the home in the late nineteenth century.
  - (D) White lead factories were more stringent than were certain other types of factories in their enforcement of workplace safety regulations.
  - (E) Even brief exposure to the conditions typically found in white lead factories could cause lead poisoning among factory workers.
86. The passage is primarily concerned with
- (A) presenting various groups' views of the motives of those proposing certain legislation
  - (B) contrasting the reasoning of various groups concerning their positions on certain proposed legislation
  - (C) tracing the process whereby certain proposed legislation was eventually enacted
  - (D) assessing the success of tactics adopted by various groups with respect to certain proposed legislation
  - (E) evaluating the arguments of various groups concerning certain proposed legislation

Line 1 In 1955 Maurice Duverger published *The Political Role of Women*, the first behavioral, multinational comparison of women's electoral participation ever to use election data and survey data together. His study analyzed women's patterns of voting, political candidacy, and political activism in four European countries during the first half of the twentieth century. Duverger's research findings were that women voted somewhat less frequently than men (the difference narrowing the longer women had the vote) and were slightly more conservative.

Duverger's work set an early standard for the sensitive analysis of women's electoral activities. Moreover, to Duverger's credit, he placed his findings in the context of many of the historical processes that had shaped these activities. However, since these contexts have changed over time, Duverger's approach has proved more durable than his actual findings. In addition, Duverger's discussion of his findings was hampered by his failure to consider certain specific factors important to women's electoral participation at the time he collected his data: the influence of political regimes, the effects of economic factors, and the ramifications of political and social relations between women and men. Given this failure, Duverger's study foreshadowed the enduring limitations of the behavioralist approach to the multinational study of women's political participation.



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Questions 87–92 refer to the passage above.

87. The primary purpose of the passage is to
- (A) evaluate a research study
  - (B) summarize the history of a research area
  - (C) report new research findings
  - (D) reinterpret old research findings
  - (E) reconcile conflicting research findings
88. According to the passage, Duverger's study was unique in 1955 in that it
- (A) included both election data and survey data
  - (B) gathered data from sources never before used in political studies
  - (C) included an analysis of historical processes
  - (D) examined the influence on voting behavior of the relationships between women and men
  - (E) analyzed not only voting and political candidacy but also other political activities
89. Which of the following characteristics of a country is most clearly an example of a factor that Duverger, as described in the passage, failed to consider in his study?
- (A) A large population
  - (B) A predominantly Protestant population
  - (C) A predominantly urban population
  - (D) A one-party government
  - (E) Location in the heart of Europe



90. The author implies that Duverger's actual findings are
- (A) limited because they focus on only four countries
  - (B) inaccurate in their description of the four countries in the early 1950s
  - (C) out-of-date in that they are inapplicable in the four countries today
  - (D) flawed because they are based on unsound data
  - (E) biased by Duverger's political beliefs
91. The passage implies that, in comparing four European countries, Duverger found that the voting rates of women and men were most different in the country in which women
- (A) were most politically active
  - (B) ran for office most often
  - (C) held the most conservative political views
  - (D) had the most egalitarian relations with men
  - (E) had possessed the right to vote for the shortest time
92. The author implies that some behaviorist research involving the multinational study of women's political participation that followed Duverger's study did which of the following?
- (A) Ignored Duverger's approach
  - (B) Suffered from faults similar to those in Duverger's study
  - (C) Focused on political activism
  - (D) Focused on the influences of political regimes
  - (E) Focused on the political and social relations between women and men

Line  
The majority of successful senior managers do  
not closely follow the classical rational model of first  
clarifying goals, assessing the problem, formulating  
options, estimating likelihood of success, making a  
(5) decision, and only then taking action to implement  
the decision. Rather, in their day-to-day tactical  
maneuvers, these senior executives rely on what is  
vaguely termed "intuition" to manage a network of  
interrelated problems that require them to deal with  
(10) ambiguity, inconsistency, novelty, and surprise; and  
to integrate action into the process of thinking.  
Generations of writers on management have  
recognized that some practicing managers rely  
heavily on intuition. In general, however, such  
(15) writers display a poor grasp of what intuition is.  
Some see it as the opposite of rationality; others  
view it as an excuse for capriciousness.  
Isenberg's recent research on the cognitive  
processes of senior managers reveals that  
(20) managers' intuition is neither of these. Rather,  
senior managers use intuition in at least five distinct  
ways. First, they intuitively sense when a problem  
exists. Second, managers rely on intuition to  
perform well-learned behavior patterns rapidly. This  
(25) intuition is not arbitrary or irrational, but is based  
on years of painstaking practice and hands-on  
experience that build skills. A third function of  
intuition is to synthesize isolated bits of data and  
practice into an integrated picture, often in  
(30) an "Aha!" experience. Fourth, some managers use  
intuition as a check on the results of more rational  
analysis. Most senior executives are familiar with  
the formal decision analysis models and tools,  
and those who use such systematic methods  
(35) for reaching decisions are occasionally leery of  
solutions suggested by these methods which run  
counter to their sense of the correct course of  
action. Finally, managers can use intuition to bypass  
in-depth analysis and move rapidly to engender a  
(40) plausible solution. Used in this way, intuition is an  
almost instantaneous cognitive process in which a  
manager recognizes familiar patterns.  
One of the implications of the intuitive style  
of executive management is that "thinking" is  
(45) inseparable from acting. Since managers often "know"  
what is right before they can analyze and explain it,  
they frequently act first and explain later. Analysis is  
inextricably tied to action in thinking/acting cycles,  
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- (50) companies and organizations not by analyzing a problematic situation and then acting, but by acting and analyzing in close concert. Given the great uncertainty of many of the management issues that they face, senior managers often instigate a course  
(55) of action simply to learn more about an issue. They then use the results of the action to develop a more complete understanding of the issue. One implication of thinking/acting cycles is that action is often part of defining the problem, not just of  
(60) implementing the solution.

Questions 93–98 refer to the passage above.

93. According to the passage, senior managers use intuition in all of the following ways EXCEPT to
- (A) speed up the creation of a solution to a problem
  - (B) identify a problem
  - (C) bring together disparate facts
  - (D) stipulate clear goals
  - (E) evaluate possible solutions to a problem
94. The passage suggests which of the following about the "writers on management" mentioned in line 12?
- (A) They have criticized managers for not following the classical rational model of decision analysis.
  - (B) They have not based their analyses on a sufficiently large sample of actual managers.
  - (C) They have relied in drawing their conclusions on what managers say rather than on what managers do.
  - (D) They have misunderstood how managers use intuition in making business decisions.
  - (E) They have not acknowledged the role of intuition in managerial practice.

95. Which of the following best exemplifies "an 'Aha!' experience" (line 30) as it is presented in the passage?
- (A) A manager risks taking an action whose outcome is unpredictable to discover whether the action changes the problem at hand.
  - (B) A manager performs well-learned and familiar behavior patterns in creative and uncharacteristic ways to solve a problem.
  - (C) A manager suddenly connects seemingly unrelated facts and experiences to create a pattern relevant to the problem at hand.
  - (D) A manager rapidly identifies the methodology used to compile data yielded by systematic analysis.
  - (E) A manager swiftly decides which of several sets of tactics to implement in order to deal with the contingencies suggested by a problem.
96. According to the passage, the classical model of decision analysis includes all of the following EXCEPT
- (A) evaluation of a problem
  - (B) creation of possible solutions to a problem
  - (C) establishment of clear goals to be reached by the decision
  - (D) action undertaken in order to discover more information about a problem
  - (E) comparison of the probable effects of different solutions to a problem
97. It can be inferred from the passage that which of the following would most probably be one major difference in behavior between Manager X, who uses intuition to reach decisions, and Manager Y, who uses only formal decision analysis?
- (A) Manager X analyzes first and then acts; Manager Y does not.
  - (B) Manager X checks possible solutions to a problem by systematic analysis; Manager Y does not.
  - (C) Manager X takes action in order to arrive at the solution to a problem; Manager Y does not.
  - (D) Manager Y draws on years of hands-on experience in creating a solution to a problem; Manager X does not.
  - (E) Manager Y depends on day-to-day tactical maneuvering; Manager X does not.
98. The passage provides support for which of the following statements?
- (A) Managers who rely on intuition are more successful than those who rely on formal decision analysis.
  - (B) Managers cannot justify their intuitive decisions.
  - (C) Managers' intuition works contrary to their rational and analytical skills.
  - (D) Logical analysis of a problem increases the number of possible solutions.
  - (E) Intuition enables managers to employ their practical experience more efficiently.

- Line Frazier and Mosteller assert that medical research could be improved by a move toward larger, simpler clinical trials of medical treatments. Currently, researchers collect far more background
- (5) information on patients than is strictly required for their trials—substantially more than hospitals collect—thereby escalating costs of data collection, storage, and analysis. Although limiting information collection could increase the risk that
- (10) researchers will overlook facts relevant to a study, Frazier and Mosteller contend that such risk, never entirely eliminable from research, would still be small in most studies. Only in research on entirely new treatments are new and unexpected variables
- (15) likely to arise.

- Frazier and Mosteller propose not only that researchers limit data collection on individual patients but also that researchers enroll more patients in clinical trials, thereby obtaining a more
- (20) representative sample of the total population with the disease under study. Often researchers restrict study participation to patients who have no ailments besides those being studied. A treatment judged successful under these ideal conditions can
- (25) then be evaluated under normal conditions. Broadening the range of trial participants, Frazier and Mosteller suggest, would enable researchers to evaluate a treatment's efficacy for diverse patients under various conditions and to evaluate its
- (30) effectiveness for different patient-subgroups. For example, the value of a treatment for a progressive disease may vary according to a patient's stage of disease. Patients' ages may also affect a treatment's efficacy.

Questions 99–103 refer to the passage above.

99. The passage is primarily concerned with
- (A) identifying two practices in medical research that may affect the accuracy of clinical trials
  - (B) describing aspects of medical research that tend to drive up costs
  - (C) evaluating an analysis of certain shortcomings of current medical research practices
  - (D) describing proposed changes to the ways in which clinical trials are conducted
  - (E) explaining how medical researchers have traditionally conducted clinical trials and how such trials are likely to change
100. Which of the following can be inferred from the passage about a study of the category of patients referred to in lines 21–23?
- (A) Its findings might have limited applicability.
  - (B) It would be prohibitively expensive in its attempt to create ideal conditions.
  - (C) It would be the best way to sample the total population of potential patients.
  - (D) It would allow researchers to limit information collection without increasing the risk that important variables could be overlooked.
  - (E) Its findings would be more accurate if it concerned treatments for a progressive disease than if it concerned treatments for a nonprogressive disease.

101. It can be inferred from the passage that a study limited to patients like those mentioned in lines 21–23 would have which of the following advantages over the kind of study proposed by Frazier and Mosteller?

- (A) It would yield more data and its findings would be more accurate.
- (B) It would cost less in the long term, though it would be more expensive in its initial stages.
- (C) It would limit the number of variables researchers would need to consider when evaluating the treatment under study.
- (D) It would help researchers to identify subgroups of patients with secondary conditions that might also be treatable.
- (E) It would enable researchers to assess the value of an experimental treatment for the average patient.

102. The author mentions patients' ages (line 33) primarily in order to

- (A) identify the most critical variable differentiating subgroups of patients
- (B) cast doubt on the advisability of implementing Frazier and Mosteller's proposals about medical research
- (C) indicate why progressive diseases may require different treatments at different stages
- (D) illustrate a point about the value of enrolling a wide range of patients in clinical trials
- (E) substantiate an argument about the problems inherent in enrolling large numbers of patients in clinical trials

103. According to the passage, which of the following describes a result of the way in which researchers generally conduct clinical trials?

- (A) They expend resources on the storage of information likely to be irrelevant to the study they are conducting.
- (B) They sometimes compromise the accuracy of their findings by collecting and analyzing more information than is strictly required for their trials.
- (C) They avoid the risk of overlooking variables that might affect their findings, even though doing so raises their research costs.
- (D) Because they attempt to analyze too much information, they overlook facts that could emerge as relevant to their studies.
- (E) In order to approximate the conditions typical of medical treatment, they base their methods of information collection on those used by hospitals.



- Line According to a recent theory, Archean-age  
gold-quartz vein systems were formed more than  
two billion years ago from magmatic fluids that  
originated from molten granite-like bodies deep  
(5) beneath the surface of the Earth. This theory is  
contrary to the widely held view that the systems  
were deposited from metamorphic fluids, that is,  
from fluids that formed during the dehydration of  
wet sedimentary rocks.
- (10) The recently developed theory has considerable  
practical importance. Most of the gold deposits  
discovered during the original gold rushes were  
exposed at the Earth's surface and were found  
because they had shed trails of alluvial gold  
(15) that were easily traced by simple prospecting  
methods. Although these same methods still lead  
to an occasional discovery, most deposits not yet  
discovered have gone undetected because they are  
buried and have no surface expression.
- (20) The challenge in exploration is therefore to  
unravel the subsurface geology of an area and  
pinpoint the position of buried minerals. Methods  
widely used today include analysis of aerial images  
that yield a broad geological overview; geophysical  
(25) techniques that provide data on the magnetic,  
electrical, and mineralogical properties of the  
rocks being investigated; and sensitive chemical  
tests that are able to detect the subtle chemical  
halos that often envelop mineralization. However,  
(30) none of these high-technology methods are of any  
value if the sites to which they are applied have  
never mineralized, and to maximize the chances of  
discovery the explorer must therefore pay particular  
attention to selecting the ground formations most  
(35) likely to be mineralized. Such ground selection relies  
to varying degrees on conceptual models, which  
take into account theoretical studies of relevant  
factors.
- These models are constructed primarily from  
(40) empirical observations of known mineral deposits  
and from theories of ore-forming processes.  
The explorer uses the models to identify those  
geological features that are critical to the formation  
of the mineralization being modeled, and then tries  
(45) to select areas for exploration that exhibit as many  
of the critical features as possible.

Questions 104–110 refer to the passage above.

104. The author is primarily concerned with
- (A) advocating a return to an older methodology
  - (B) explaining the importance of a recent theory
  - (C) enumerating differences between two widely used methods
  - (D) describing events leading to a discovery
  - (E) challenging the assumptions on which a theory is based
105. According to the passage, the widely held view of Archean-age gold-quartz vein systems is that such systems
- (A) were formed from metamorphic fluids
  - (B) originated in molten granite-like bodies
  - (C) were formed from alluvial deposits
  - (D) generally have surface expression
  - (E) are not discoverable through chemical tests
106. The passage implies that which of the following steps would be the first performed by explorers who wish to maximize their chances of discovering gold?
- (A) Surveying several sites known to have been formed more than two billion years ago
  - (B) Limiting exploration to sites known to have been formed from metamorphic fluid
  - (C) Using an appropriate conceptual model to select a site for further exploration
  - (D) Using geophysical methods to analyze rocks over a broad area
  - (E) Limiting exploration to sites where alluvial gold has previously been found



107. Which of the following statements about discoveries of gold deposits is supported by information in the passage?
- (A) The number of gold discoveries made annually has increased between the time of the original gold rushes and the present.
  - (B) New discoveries of gold deposits are likely to be the result of exploration techniques designed to locate buried mineralization.
  - (C) It is unlikely that newly discovered gold deposits will ever yield as much as did those deposits discovered during the original gold rushes.
  - (D) Modern explorers are divided on the question of the utility of simple prospecting methods as a source of new discoveries of gold deposits.
  - (E) Models based on the theory that gold originated from magmatic fluids have already led to new discoveries of gold deposits.
108. It can be inferred from the passage that which of the following is easiest to detect?
- (A) A gold-quartz vein system originating in magmatic fluids
  - (B) A gold-quartz vein system originating in metamorphic fluids
  - (C) A gold deposit that is mixed with granite
  - (D) A gold deposit that has shed alluvial gold
  - (E) A gold deposit that exhibits chemical halos
109. The theory mentioned in lines 1–5 relates to the conceptual models discussed in the passage in which of the following ways?
- (A) It may furnish a valid account of ore-forming processes, and, hence, can support conceptual models that have great practical significance.
  - (B) It suggests that certain geological formations, long believed to be mineralized, are in fact mineralized, thus confirming current conceptual models.
  - (C) It suggests that there may not be enough similarity across Archean-age gold-quartz vein systems to warrant the formulation of conceptual models.
  - (D) It corrects existing theories about the chemical halos of gold deposits, and thus provides a basis for correcting current conceptual models.
  - (E) It suggests that simple prospecting methods still have a higher success rate in the discovery of gold deposits than do more modern methods.
110. According to the passage, methods of exploring for gold that are widely used today are based on which of the following facts?
- (A) Most of the Earth's remaining gold deposits are still molten.
  - (B) Most of the Earth's remaining gold deposits are exposed at the surface.
  - (C) Most of the Earth's remaining gold deposits are buried and have no surface expression.
  - (D) Only one type of gold deposit warrants exploration, since the other types of gold deposits are found in regions difficult to reach.
  - (E) Only one type of gold deposit warrants exploration, since the other types of gold deposits are unlikely to yield concentrated quantities of gold.

- Line While the most abundant and dominant species within a particular ecosystem is often crucial in perpetuating the ecosystem, a “keystone” species, here defined as one whose effects are much larger than would be predicted from its abundance, can also play a vital role. But because complex species interactions may be involved, identifying a keystone species by removing the species and observing changes in the ecosystem is problematic. It might seem that certain traits would clearly define a species as a keystone species; for example, *Pisaster ochraceus* is often a keystone predator because it consumes and suppresses mussel populations, which in the absence of this starfish can be a dominant species. But such predation on a dominant or potentially dominant species occurs in systems that do as well as in systems that do not have species that play keystone roles. Moreover, whereas *P. ochraceus* occupies an unambiguous keystone role on wave-exposed rocky headlands, in more wave-sheltered habitats the impact of *P. ochraceus* predation is weak or nonexistent, and at certain sites sand burial is responsible for eliminating mussels. Keystone status appears to depend on context, whether of particular geography or of such factors as community diversity (for example, a reduction in species diversity may thrust more of the remaining species into keystone roles) and length of species interaction (since newly arrived species in particular may dramatically affect ecosystems).

Questions 111–114 refer to the passage above.

111. The passage mentions which of the following as a factor that affects the role of *P. ochraceus* as a keystone species within different habitats?
- (A) The degree to which the habitat is sheltered from waves
  - (B) The degree to which other animals within a habitat prey on mussels
  - (C) The fact that mussel populations are often not dominant within some habitats occupied by *P. ochraceus*
  - (D) The size of the *P. ochraceus* population within the habitat
  - (E) The fact that there is great species diversity within some habitats occupied by *P. ochraceus*
112. Which of the following hypothetical experiments most clearly exemplifies the method of identifying species’ roles that the author considers problematic?
- (A) A population of seals in an Arctic habitat is counted in order to determine whether it is the dominant species in that ecosystem.
  - (B) A species of fish that is a keystone species in one marine ecosystem is introduced into another marine ecosystem to see whether the species will come to occupy a keystone role.
  - (C) In order to determine whether a species of monkey is a keystone species within a particular ecosystem, the monkeys are removed from that ecosystem and the ecosystem is then studied.
  - (D) Different mountain ecosystems are compared to determine how geography affects a particular species’ ability to dominate its ecosystem.
  - (E) In a grassland experiencing a changing climate, patterns of species extinction are traced in order to evaluate the effect of climate changes on keystone species in that grassland.

113. Which of the following, if true, would most clearly support the argument about keystone status advanced in the last sentence of the passage (lines 24–31)?

- (A) A species of bat is primarily responsible for keeping insect populations within an ecosystem low, and the size of the insect population in turn affects bird species within that ecosystem.
- (B) A species of iguana occupies a keystone role on certain tropical islands, but does not play that role on adjacent tropical islands that are inhabited by a greater number of animal species.
- (C) Close observation of a savannah ecosystem reveals that more species occupy keystone roles within that ecosystem than biologists had previously believed.
- (D) As a keystone species of bee becomes more abundant, it has a larger effect on the ecosystem it inhabits.
- (E) A species of moth that occupies a keystone role in a prairie habitat develops coloration patterns that camouflage it from potential predators.

114. The passage suggests which of the following about the identification of a species as a keystone species?

- (A) Such an identification depends primarily on the species' relationship to the dominant species.
- (B) Such an identification can best be made by removing the species from a particular ecosystem and observing changes that occur in the ecosystem.
- (C) Such an identification is likely to be less reliable as an ecosystem becomes less diverse.
- (D) Such an identification seems to depend on various factors within the ecosystem.
- (E) Such an identification can best be made by observing predation behavior.

Line  
the universe is expanding, it became reasonable  
to ask: Will the universe continue to expand  
indefinitely, or is there enough mass in it for the  
mutual attraction of its constituents to bring this  
expansion to a halt? It can be calculated that  
the critical density of matter needed to brake the  
expansion and "close" the universe is equivalent  
to three hydrogen atoms per cubic meter. But the  
density of the observable universe—luminous matter  
in the form of galaxies—comes to only a fraction  
of this. If the expansion of the universe is to stop,  
there must be enough invisible matter in the  
universe to exceed the luminous matter in density  
by a factor of roughly 70.  
Our contribution to the search for this "missing  
matter" has been to study the rotational velocity  
of galaxies at various distances from their center  
of rotation. It has been known for some time that  
outside the bright nucleus of a typical spiral galaxy  
luminosity falls off rapidly with distance from the  
center. If luminosity were a true indicator of mass,  
most of the mass would be concentrated toward  
the center. Outside the nucleus the rotational  
velocity would decrease geometrically with distance  
from the center, in conformity with Kepler's law.  
Instead we have found that the rotational velocity  
in spiral galaxies either remains constant with  
increasing distance from the center or increases  
slightly. This unexpected result indicates that the  
fall-off in luminous mass with distance from the  
center is balanced by an increase in nonluminous  
mass.  
Our findings suggest that as much as 90  
percent of the mass of the universe is not radiating  
at any wavelength with enough intensity to be  
detected on the Earth. Such dark matter could be  
in the form of extremely dim stars of low mass,  
of large planets like Jupiter, or of black holes,  
either small or massive. While it has not yet been  
determined whether this mass is sufficient to  
close the universe, some physicists consider it  
significant that estimates are converging on the  
critical value.

- Line After evidence was obtained in the 1920s that the universe is expanding, it became reasonable to ask: Will the universe continue to expand indefinitely, or is there enough mass in it for the
- (5) mutual attraction of its constituents to bring this expansion to a halt? It can be calculated that the critical density of matter needed to brake the expansion and “close” the universe is equivalent to three hydrogen atoms per cubic meter. But the
- (10) density of the observable universe—luminous matter in the form of galaxies—comes to only a fraction of this. If the expansion of the universe is to stop, there must be enough invisible matter in the universe to exceed the luminous matter in density
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- Our contribution to the search for this “missing matter” has been to study the rotational velocity of galaxies at various distances from their center of rotation. It has been known for some time that
- (20) outside the bright nucleus of a typical spiral galaxy luminosity falls off rapidly with distance from the center. If luminosity were a true indicator of mass, most of the mass would be concentrated toward the center. Outside the nucleus the rotational
- (25) velocity would decrease geometrically with distance from the center, in conformity with Kepler’s law. Instead we have found that the rotational velocity in spiral galaxies either remains constant with
- (30) slightly. This unexpected result indicates that the falloff in luminous mass with distance from the center is balanced by an increase in nonluminous mass.

- Our findings suggest that as much as 90
- (35) percent of the mass of the universe is not radiating at any wavelength with enough intensity to be detected on the Earth. Such dark matter could be in the form of extremely dim stars of low mass, of large planets like Jupiter, or of black holes,
- (40) either small or massive. While it has not yet been determined whether this mass is sufficient to close the universe, some physicists consider it significant that estimates are converging on the critical value.

Questions 115–119 refer to the passage above.

115. The passage is primarily concerned with
- (A) defending a controversial approach  
(B) criticizing an accepted view  
(C) summarizing research findings  
(D) contrasting competing theories  
(E) describing an innovative technique
116. The authors’ study indicates that, in comparison with the outermost regions of a typical spiral galaxy, the region just outside the nucleus can be characterized as having
- (A) higher rotational velocity and higher luminosity  
(B) lower rotational velocity and higher luminosity  
(C) lower rotational velocity and lower luminosity  
(D) similar rotational velocity and higher luminosity  
(E) similar rotational velocity and similar luminosity
117. The authors’ suggestion that “as much as 90 percent of the mass of the universe is not radiating at any wavelength with enough intensity to be detected on the Earth” (lines 34–37) would be most weakened if which of the following were discovered to be true?
- (A) Spiral galaxies are less common than types of galaxies that contain little nonluminous matter.  
(B) Luminous and nonluminous matter are composed of the same basic elements.  
(C) The bright nucleus of a typical spiral galaxy also contains some nonluminous matter.  
(D) The density of the observable universe is greater than most previous estimates have suggested.  
(E) Some galaxies do not rotate or rotate too slowly for their rotational velocity to be measured.

118. It can be inferred from information presented in the passage that if the density of the universe were equivalent to significantly less than three hydrogen atoms per cubic meter, which of the following would be true as a consequence?

- (A) Luminosity would be a true indicator of mass.
- (B) Different regions in spiral galaxies would rotate at the same velocity.
- (C) The universe would continue to expand indefinitely.
- (D) The density of the invisible matter in the universe would have to be more than 70 times the density of the luminous matter.
- (E) More of the invisible matter in spiral galaxies would have to be located in their nuclei than in their outer regions.

119. The authors propose all of the following as possibly contributing to the "missing matter" in spiral galaxies EXCEPT

- (A) massive black holes
- (B) small black holes
- (C) small, dim stars
- (D) massive stars
- (E) large planets

technology, whereas others are seen as arising from labor unions negotiated the introduction of the attributes to the particular way management and organization of workers. Some changes Clark and tasks, skills, training opportunities, administration, to semielectronic switching systems altered work maintenance-intensive electromechanical switches a change at the telephone exchange from maintenance. At the empirical level Clark shows how supported by appropriate systems of operation and just scrap unless it is organized functionally and cold, hard metal are bound to fail, for machinery is Attempts to reduce the meaning of technology to relationship between social and technical variables. Theoretically he defines "technology" in terms of by both theoretical and empirical arguments. Clark refutes the extremes of the constructivists influencing skills and work organization as existing outside society, capable of directly constructivism, in other words, is to view technology forms of order on society. The alternative to for example, that machinery imposes appropriate technological determinists are supposed to believe, misrepresenting technological determinism. The constructivists gain acceptance by mainstream called social constructivism. machinery. This position represents the new interests into the design and configuration of the interested parties who seek to incorporate their own construed as the outcome of negotiations among process from the workers. Technological change is manager's desire to wrest control of the labor a technological system is subordinate to the reflects social choices. For Braverman, the stage of analysis, that emphasizes the way machinery sociological fashion, exemplified by Braverman's possibility has been obscured by the recent and managerial organization. Clark believes this technology can be a primary determinant of social and work organization. But more strongly, technology have a decisive influence on job skills Clark makes the point that the characteristics of a constructivism. technology, technological determinism and social lively issues in the history and sociology of contribution to a debate that encompasses two maintenance work and workers is a solid modernization of a telephone exchange on exchange Jon Clark's study of the effect of the



Line Jon Clark's study of the effect of the modernization of a telephone exchange on exchange maintenance work and workers is a solid contribution to a debate that encompasses two  
(5) lively issues in the history and sociology of technology: technological determinism and social constructivism.

Clark makes the point that the characteristics of a technology have a decisive influence on job skills  
(10) and work organization. Put more strongly, technology can be a primary determinant of social and managerial organization. Clark believes this possibility has been obscured by the recent sociological fashion, exemplified by Braverman's analysis, that emphasizes the way machinery  
(15) reflects social choices. For Braverman, the shape of a technological system is subordinate to the manager's desire to wrest control of the labor process from the workers. Technological change is  
(20) construed as the outcome of negotiations among interested parties who seek to incorporate their own interests into the design and configuration of the machinery. This position represents the new mainstream called social constructivism.

(25) The constructivists gain acceptance by misrepresenting technological determinism: technological determinists are supposed to believe, for example, that machinery imposes appropriate forms of order on society. The alternative to  
(30) constructivism, in other words, is to view technology as existing outside society, capable of directly influencing skills and work organization.

Clark refutes the extremes of the constructivists by both theoretical and empirical arguments.  
(35) Theoretically he defines "technology" in terms of relationships between social and technical variables. Attempts to reduce the meaning of technology to cold, hard metal are bound to fail, for machinery is just scrap unless it is organized functionally and  
(40) supported by appropriate systems of operation and maintenance. At the empirical level Clark shows how a change at the telephone exchange from maintenance-intensive electromechanical switches to semielectronic switching systems altered work  
(45) tasks, skills, training opportunities, administration, and organization of workers. Some changes Clark attributes to the particular way management and labor unions negotiated the introduction of the technology, whereas others are seen as arising from

(50) the capabilities and nature of the technology itself. Thus Clark helps answer the question: "When is social choice decisive and when are the concrete characteristics of technology more important?"

Questions 120–127 refer to the passage above.

120. The primary purpose of the passage is to
- (A) advocate a more positive attitude toward technological change
  - (B) discuss the implications for employees of the modernization of a telephone exchange
  - (C) consider a successful challenge to the constructivist view of technological change
  - (D) challenge the position of advocates of technological determinism
  - (E) suggest that the social causes of technological change should be studied in real situations
121. Which of the following statements about the modernization of the telephone exchange is supported by information in the passage?
- (A) The new technology reduced the role of managers in labor negotiations.
  - (B) The modernization was implemented without the consent of the employees directly affected by it.
  - (C) The modernization had an impact that went significantly beyond maintenance routines.
  - (D) Some of the maintenance workers felt victimized by the new technology.
  - (E) The modernization gave credence to the view of advocates of social constructivism.
122. Which of the following most accurately describes Clark's opinion of Braverman's position?
- (A) He respects its wide-ranging popularity.
  - (B) He disapproves of its misplaced emphasis on the influence of managers.
  - (C) He admires the consideration it gives to the attitudes of the workers affected.
  - (D) He is concerned about its potential to impede the implementation of new technologies.
  - (E) He is sympathetic to its concern about the impact of modern technology on workers.



123. The information in the passage suggests that which of the following statements from hypothetical sociological studies of change in industry most clearly exemplifies the social constructivists' version of technological determinism?
- (A) It is the available technology that determines workers' skills, rather than workers' skills influencing the application of technology.
  - (B) All progress in industrial technology grows out of a continuing negotiation between technological possibility and human need.
  - (C) Some organizational change is caused by people; some is caused by computer chips.
  - (D) Most major technological advances in industry have been generated through research and development.
  - (E) Some industrial technology eliminates jobs, but educated workers can create whole new skills areas by the adaptation of the technology.
124. The information in the passage suggests that Clark believes that which of the following would be true if social constructivism had not gained widespread acceptance?
- (A) Businesses would be more likely to modernize without considering the social consequences of their actions.
  - (B) There would be greater understanding of the role played by technology in producing social change.
  - (C) Businesses would be less likely to understand the attitudes of employees affected by modernization.
  - (D) Modernization would have occurred at a slower rate.
  - (E) Technology would have played a greater part in determining the role of business in society.
125. According to the passage, constructivists employed which of the following to promote their argument?
- (A) Empirical studies of business situations involving technological change
  - (B) Citation of managers supportive of their position
  - (C) Construction of hypothetical situations that support their view
  - (D) Contrasts of their view with a misstatement of an opposing view
  - (E) Descriptions of the breadth of impact of technological change
126. The author of the passage uses the expression "are supposed to" in line 27 primarily in order to
- (A) suggest that a contention made by constructivists regarding determinists is inaccurate
  - (B) define the generally accepted position of determinists regarding the implementation of technology
  - (C) engage in speculation about the motivation of determinists
  - (D) lend support to a comment critical of the position of determinists
  - (E) contrast the historical position of determinists with their position regarding the exchange modernization
127. Which of the following statements about Clark's study of the telephone exchange can be inferred from information in the passage?
- (A) Clark's reason for undertaking the study was to undermine Braverman's analysis of the function of technology.
  - (B) Clark's study suggests that the implementation of technology should be discussed in the context of conflict between labor and management.
  - (C) Clark examined the impact of changes in the technology of switching at the exchange in terms of overall operations and organization.
  - (D) Clark concluded that the implementation of new switching technology was equally beneficial to management and labor.
  - (E) Clark's analysis of the change in switching systems applies only narrowly to the situation at the particular exchange that he studied.

- Line All the cells in a particular plant start out with the same complement of genes. How then can these cells differentiate and form structures as different as roots, stems, leaves, and fruits? The answer is that only a small subset of the genes in a particular kind of cell are expressed, or turned on, at a given time. This is accomplished by a complex system of chemical messengers that in plants include hormones and other regulatory molecules.
- (5) Five major hormones have been identified: auxin, abscisic acid, cytokinin, ethylene, and gibberellin. Studies of plants have now identified a new class of regulatory molecules called oligosaccharins.

- Unlike the oligosaccharins, the five well-known plant hormones are pleiotropic rather than specific; that is, each has more than one effect on the growth and development of plants. The five have so many simultaneous effects that they are not very useful in artificially controlling the growth of crops. Auxin, for instance, stimulates the rate of cell elongation, causes shoots to grow up and roots to grow down, and inhibits the growth of lateral shoots. Auxin also causes the plant to develop a vascular system, to form lateral roots, and to produce ethylene.
- (15) (20) (25)

- The pleiotropy of the five well-studied plant hormones is somewhat analogous to that of certain hormones in animals. For example, hormones from the hypothalamus in the brain stimulate the anterior lobe of the pituitary gland to synthesize and release many different hormones, one of which stimulates the release of hormones from the adrenal cortex. These hormones have specific effects on target organs all over the body. One hormone stimulates the thyroid gland, for example, another the ovarian follicle cells, and so forth. In other words, there is a hierarchy of hormones.
- (30) (35)

- Such a hierarchy may also exist in plants. Oligosaccharins are fragments of the cell wall released by enzymes: different enzymes release different oligosaccharins. There are indications that pleiotropic plant hormones may actually function by activating the enzymes that release these other, more specific chemical messengers from the cell wall.
- (40)

Questions 128–133 refer to the passage above.

128. According to the passage, the five well-known plant hormones are not useful in controlling the growth of crops because
- (A) it is not known exactly what functions the hormones perform  
(B) each hormone has various effects on plants  
(C) none of the hormones can function without the others  
(D) each hormone has different effects on different kinds of plants  
(E) each hormone works on only a small subset of a cell's genes at any particular time
129. The passage suggests that the place of hypothalamic hormones in the hormonal hierarchies of animals is similar to the place of which of the following in plants?
- (A) Plant cell walls  
(B) The complement of genes in each plant cell  
(C) A subset of a plant cell's gene complement  
(D) The five major hormones  
(E) The oligosaccharins
130. The passage suggests that which of the following is a function likely to be performed by an oligosaccharin?
- (A) To stimulate a particular plant cell to become part of a plant's root system  
(B) To stimulate the walls of a particular cell to produce other oligosaccharins  
(C) To activate enzymes that release specific chemical messengers from plant cell walls  
(D) To duplicate the gene complement in a particular plant cell  
(E) To produce multiple effects on a particular subsystem of plant cells

131. The author mentions specific effects that auxin has on plant development in order to illustrate the
- (A) point that some of the effects of plant hormones can be harmful
  - (B) way in which hormones are produced by plants
  - (C) hierarchical nature of the functioning of plant hormones
  - (D) differences among the best-known plant hormones
  - (E) concept of pleiotropy as it is exhibited by plant hormones
132. According to the passage, which of the following best describes a function performed by oligosaccharins?
- (A) Regulating the daily functioning of a plant's cells
  - (B) Interacting with one another to produce different chemicals
  - (C) Releasing specific chemical messengers from a plant's cell walls
  - (D) Producing the hormones that cause plant cells to differentiate to perform different functions
  - (E) Influencing the development of a plant's cells by controlling the expression of the cells' genes
133. The passage suggests that, unlike the pleiotropic hormones, oligosaccharins could be used effectively to
- (A) trace the passage of chemicals through the walls of cells
  - (B) pinpoint functions of other plant hormones
  - (C) artificially control specific aspects of the development of crops
  - (D) alter the complement of genes in the cells of plants
  - (E) alter the effects of the five major hormones on plant development

Line In the two decades between 1910 and 1930, more than ten percent of the black population of the United States left the South, where the preponderance of the black population had been located, and migrated to northern states, with the largest number moving, it is claimed, between 1916 and 1918. It has been frequently assumed, but not proved, that the majority of the migrants in what has come to be called the Great Migration came from rural areas and were motivated by two concurrent factors: the collapse of the cotton industry following the boll weevil infestation, which began in 1898, and increased demand in the North for labor following the cessation of European immigration caused by the outbreak of the First World War in 1914. This assumption has led to the conclusion that the migrants' subsequent lack of economic mobility in the North is tied to rural backwardness, a background that implies unfamiliarity with urban living and a lack of industrial skills. But the question of who actually left the South has never been rigorously investigated. Although numerous investigations document an exodus from rural southern areas to southern cities prior to the Great Migration, no one has considered whether the same migrants then moved on to northern cities. In 1910 more than 600,000 black workers, or ten percent of the black workforce, reported themselves to be engaged in "manufacturing and mechanical pursuits"; the federal census category roughly encompassing the entire industrial sector. The Great Migration could easily have been made up entirely of this group and their families. It is perhaps surprising to argue that an employed population could be enticed to move, but an explanation lies in the labor conditions then prevalent in the South. About thirty-five percent of the urban black population in the South was engaged in skilled trades. Some were from the old artisan class of slavery—blacksmiths, masons, carpenters—which had had a monopoly of certain trades, but they were gradually being pushed out by competition, mechanization, and obsolescence. The remaining sixty-five percent, more recently urbanized, worked in newly developed industries—tobacco, lumber, coal and iron manufacture, and railroads. Wages in the South, however, were low, and black workers were aware, through labor recruiters and the black press, that they could earn more even as unskilled

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- But the question of who actually left the South has never been rigorously investigated. Although numerous investigations document an exodus from rural southern areas to southern cities prior to the Great Migration, no one has considered whether the same migrants then moved on to northern cities. In 1910 more than 600,000 black workers, or ten percent of the black workforce, reported themselves to be engaged in "manufacturing and mechanical pursuits," the federal census category roughly encompassing the entire industrial sector. The Great Migration could easily have been made up entirely of this group and their families. It is perhaps surprising to argue that an employed population could be enticed to move, but an explanation lies in the labor conditions then prevalent in the South.

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- (50) workers in the North than they could as artisans in the South. After the boll weevil infestation, urban black workers faced competition from the continuing influx of both black and white rural workers, who were driven to undercut the wages formerly paid for industrial jobs. Thus, a move north would be seen as advantageous to a group that was already urbanized and steadily employed, and the easy conclusion tying their subsequent economic problems in the North to their rural background comes into question.

Questions 134–139 refer to the passage above.

134. The author indicates explicitly that which of the following records has been a source of information in her investigation?
- (A) United States Immigration Service reports from 1914 to 1930
  - (B) Payrolls of southern manufacturing firms between 1910 and 1930
  - (C) The volume of cotton exports between 1898 and 1910
  - (D) The federal census of 1910
  - (E) Advertisements of labor recruiters appearing in southern newspapers after 1910
135. In the passage, the author anticipates which of the following as a possible objection to her argument?
- (A) It is uncertain how many people actually migrated during the Great Migration.
  - (B) The eventual economic status of the Great Migration migrants has not been adequately traced.
  - (C) It is not likely that people with steady jobs would have reason to move to another area of the country.
  - (D) It is not true that the term "manufacturing and mechanical pursuits" actually encompasses the entire industrial sector.
  - (E) Of the African American workers living in southern cities, only those in a small number of trades were threatened by obsolescence.

136. According to the passage, which of the following is true of wages in southern cities in 1910?

- (A) They were being pushed lower as a result of increased competition.
- (B) They had begun to rise so that southern industry could attract rural workers.
- (C) They had increased for skilled workers but decreased for unskilled workers.
- (D) They had increased in large southern cities but decreased in small southern cities.
- (E) They had increased in newly developed industries but decreased in the older trades.

137. The author cites each of the following as possible influences in an African American worker's decision to migrate north in the Great Migration EXCEPT

- (A) wage levels in northern cities
- (B) labor recruiters
- (C) competition from rural workers
- (D) voting rights in northern states
- (E) the African American press

138. It can be inferred from the passage that the "easy conclusion" mentioned in line 58 is based on which of the following assumptions?

- (A) People who migrate from rural areas to large cities usually do so for economic reasons.
- (B) Most people who leave rural areas to take jobs in cities return to rural areas as soon as it is financially possible for them to do so.
- (C) People with rural backgrounds are less likely to succeed economically in cities than are those with urban backgrounds.
- (D) Most people who were once skilled workers are not willing to work as unskilled workers.
- (E) People who migrate from their birthplaces to other regions of a country seldom undertake a second migration.

139. The primary purpose of the passage is to

- (A) support an alternative to an accepted methodology
- (B) present evidence that resolves a contradiction
- (C) introduce a recently discovered source of information
- (D) challenge a widely accepted explanation
- (E) argue that a discarded theory deserves new attention



## 7.5 Answer Key

- |       |       |       |        |        |
|-------|-------|-------|--------|--------|
| 1. B  | 29. C | 57. C | 85. A  | 113. B |
| 2. B  | 30. B | 58. B | 86. B  | 114. D |
| 3. D  | 31. C | 59. A | 87. A  | 115. C |
| 4. A  | 32. B | 60. A | 88. A  | 116. D |
| 5. C  | 33. D | 61. B | 89. D  | 117. A |
| 6. D  | 34. B | 62. E | 90. C  | 118. C |
| 7. B  | 35. E | 63. D | 91. E  | 119. D |
| 8. B  | 36. C | 64. D | 92. B  | 120. C |
| 9. E  | 37. C | 65. B | 93. D  | 121. C |
| 10. E | 38. E | 66. C | 94. D  | 122. B |
| 11. E | 39. A | 67. B | 95. C  | 123. A |
| 12. A | 40. D | 68. E | 96. D  | 124. B |
| 13. A | 41. A | 69. D | 97. C  | 125. D |
| 14. C | 42. B | 70. E | 98. E  | 126. A |
| 15. D | 43. A | 71. B | 99. D  | 127. C |
| 16. B | 44. A | 72. D | 100. A | 128. B |
| 17. B | 45. C | 73. C | 101. C | 129. D |
| 18. B | 46. B | 74. C | 102. D | 130. A |
| 19. B | 47. E | 75. E | 103. A | 131. E |
| 20. B | 48. E | 76. A | 104. B | 132. E |
| 21. A | 49. A | 77. E | 105. A | 133. C |
| 22. D | 50. A | 78. C | 106. C | 134. D |
| 23. E | 51. D | 79. B | 107. B | 135. C |
| 24. D | 52. B | 80. C | 108. D | 136. A |
| 25. A | 53. C | 81. D | 109. A | 137. D |
| 26. C | 54. C | 82. A | 110. C | 138. C |
| 27. B | 55. E | 83. A | 111. A | 139. D |
| 28. A | 56. D | 84. E | 112. C |        |



## 7.6 Answer Explanations

The following discussion of reading comprehension is intended to familiarize you with the most efficient and effective approaches to the kinds of problems common to reading comprehension. The particular questions in this chapter are generally representative of the kinds of reading comprehension questions you will encounter on the GMAT exam. Remember that it is the problem solving strategy that is important, not the specific details of a particular question.

Questions 1–4 refer to the passage on page 364.

1. According to the passage, theory B states that which of the following is a factor that enables a schooling fish to escape predators?
- (A) The tendency of fish to form compact groups
  - (B) The movement of other fish within the school
  - (C) The inability of predators to detect schools
  - (D) The ability of fish to hide behind one another in a school
  - (E) The great speed with which a school can disperse

### Supporting idea

This question depends on understanding what the passage states about theory B, the “confusion effect.” One element of theory B is that predators may experience sensory confusion created by large numbers of moving fish in a school.

- A The compactness of groups of schooling fish is an element of theory A, not theory B.
- B Correct.** It is the movement of schooling fish around a predator that creates sensory confusion in the predator; this movement may distract the predator and help protect individual fish in the school.
- C According to the passage’s description of theory A, predators are actually slightly more likely to detect schools than they are to detect individual fish.
- D Theory B does not involve fish hiding behind one another but rather moving around the predator.
- E The passage does not discuss the speed of dispersal of schools of fish.

**The correct answer is B.**

2. According to the passage, both theory A and theory B have been developed to explain how
- (A) fish hide from predators by forming schools
  - (B) forming schools functions to protect fish from predators
  - (C) schooling among fish differs from other protective behaviors
  - (D) small fish are able to make rapid decisions
  - (E) small fish are able to survive in an environment densely populated by large predators

### Supporting idea

The passage states in its first paragraph that two theories were developed to explain why schooling occurs in so many fish species and that they both assume that schooling helps protect fish from predators.

- A While theory A involves an explanation of how schooling makes an individual fish less likely to be found by predators, theory B explains how schooling protects fish even when they are detected by predators.
- B Correct.** Both theory A and theory B begin with the assumption that schooling provides protection from predators, and each theory offers a different explanation for how that protection occurs.
- C The passage does not discuss protective behaviors other than schooling.
- D The decision-making ability of predators, not schooling fish, is discussed in the passage; schooling is presented as an instinctive behavior.
- E The passage suggests that only theory B helps explain schooling behavior in environments where many predators, large or otherwise, are found, and that theory A explains schooling in areas where predators are not as abundant.

**The correct answer is B.**

3. According to one explanation of the “confusion effect,” a fish that swims in a school will have greater advantages for survival if it
- (A) tends to be visible for no more than 200 meters
  - (B) stays near either the front or the rear of a school
  - (C) is part of a small school rather than a large school
  - (D) is very similar in appearance to the other fish in the school
  - (E) is medium-sized

#### Inference

The “confusion effect” is discussed in the third and fourth paragraphs. The first explanation of the “confusion effect” proposes that because predators prefer to select distinctive prey, they find it difficult to select one fish from among many that look the same.

- A The 200-meter visibility of fish is part of the explanation for theory A, not theory B (the “confusion effect”).
- B The location of an individual fish within a school is not discussed in the passage as being important to the “confusion effect.”
- C The size of a school of fish is not discussed as an element of the “confusion effect.”
- D **Correct.** Because predators, according to the “confusion effect,” prefer to select prey that is distinct from the rest of the school, a fish that is similar in appearance to the other fish in its school would most likely enjoy a survival advantage.
- E The size of a fish relative to the other fish in its school would most likely contribute to its ability to survive: that is, if it resembled other fish in size, it would be safer, based on what the passage says about the “confusion effect.” Furthermore, the passage gives no reason to think that merely being medium-sized would confer any advantage (unless the other fish were medium-sized as well).

The correct answer is D.

4. The author is primarily concerned with
- (A) discussing different theories
  - (B) analyzing different techniques
  - (C) defending two hypotheses
  - (D) refuting established beliefs
  - (E) revealing new evidence

#### Main idea

Determining the author’s primary concern depends on understanding the focus of the passage as a whole. The author presents two theories that purport to account for why fish, particularly small fish, tend to school and explains the arguments of proponents of each theory.

- A **Correct.** The author discusses two theories—identified as theory A and theory B—that account for the tendency of fish to school.
- B The author is not concerned with different techniques in the passage.
- C The two theories of why fish school could be referred to as hypotheses, but the author is not primarily concerned with defending them; rather, the passage explains how each attempts to account for the phenomenon in question.
- D The author presents, rather than refutes, beliefs about why fish tend to school.
- E The author reveals no evidence, new or otherwise, in the passage. The passage is a general discussion of scientific opinions based on existing evidence.

The correct answer is A.

Questions 5–7 refer to the passage on page 366.

5. The primary purpose of the passage is to
- (A) explain why a particular business strategy has been less successful than was once anticipated
  - (B) propose an alternative to a particular business strategy that has inadvertently caused ecological damage
  - (C) present a concern about the possible consequences of pursuing a particular business strategy
  - (D) make a case for applying a particular business strategy on a larger scale than is currently practiced
  - (E) suggest several possible outcomes of companies' failure to understand the economic impact of a particular business strategy

#### Main idea

This question requires understanding the passage as a whole. The passage starts out defining a goal—ecoefficiency—that has become popular among companies throughout the world and that would be expected to bring overall ecological benefits. It then immediately introduces Senge and Carstedt, who have concerns about this idea. The rest of the passage is devoted to explaining their concerns, though the passage does not present a particular alternative strategy.

- A The passage never discusses whether ecoefficiency is or is not successful but only the possible consequences of it.
- B Lines 26–28 state that Senge and Carstedt believe that a *new systemic approach* must be found, but a particular alternative strategy is never offered.
- C **Correct.** After defining ecoefficiency, the rest of the passage is devoted to describing the concerns Senge and Carstedt have about it as a goal for companies.
- D The passage reports on particular concerns about the strategy and does not advocate expanding its adoption.
- E The passage is concerned with environmental impact, not economic impact.

The correct answer is C.

6. The passage mentions which of the following as a possible consequence of companies' realization of greater profits through ecoefficiency?
- (A) The companies may be able to sell a greater number of products by lowering prices.
  - (B) The companies may be better able to attract investment capital in the global market.
  - (C) The profits may be reinvested to increase economic growth through ecoefficiency.
  - (D) The profits may be used as investment capital for industries that are not ecoefficient.
  - (E) The profits may encourage companies to make further innovations in reducing production waste.

#### Supporting ideas

This question asks for identification of an example given in the passage of what could result from the greater profits that may come with ecoefficiency. Such profits are specifically mentioned only in lines 14 and 17. The increased growth and profits referred to in line 14 are associated with increased waste generated indirectly by ecoefficient companies. The growth and profits referred to in line 17 are associated with investment of this capital in industries that may not be ecoefficient.

- A The prices of companies' products are not mentioned in the passage.
- B Greater investment in ecoefficient companies by outside sources is not mentioned in the passage.
- C The passage mentions increased profits from ecoefficiency but not the use of these profits to then increase growth through further ecoefficiency.
- D **Correct.** Lines 14–19 state explicitly that company profits from ecoefficiency may be invested in eco-inefficient industries.
- E The passage does not discuss whether companies will use increased profits from ecoefficiency to become more ecoefficient.

The correct answer is D.

7. The passage implies that which of the following is a possible consequence of a company's adoption of innovations that increase its ecoefficiency?
- (A) Company profits resulting from such innovations may be reinvested in that company with no guarantee that the company will continue to make further improvements in ecoefficiency.
  - (B) Company growth fostered by cost savings from such innovations may allow that company to manufacture a greater number of products that will be used and discarded, thus worsening environmental stress.
  - (C) A company that fails to realize significant cost savings from such innovations may have little incentive to continue to minimize the environmental impact of its production processes.
  - (D) A company that comes to depend on such innovations to increase its profits and growth may be vulnerable in the global market to competition from old-style eco-inefficient industries.
  - (E) A company that meets its ecoefficiency goals is unlikely to invest its increased profits in the development of new and innovative ecoefficiency measures.

#### Inference

The answer to this question will be an inference about what may result from a company's increased ecoefficiency. The passage suggests several outcomes from such an increase: a general worsening of the environment; a tendency for companies to manufacture more of particular products, which will then be thrown away by consumers; the possibility that increased profits will result in greater investment in industries that are not ecoefficient; and even the possibility that ecoefficiency might allow so much growth that more total waste will be produced and more overall wildlife habitat destroyed.

- A The passage suggests generally that ecoefficiency will increase companies' profits, but there is no suggestion that these companies will therefore then abandon ecoefficiency as a goal.

- B **Correct.** Lines 6–12 strongly suggest that it is possible that the increased growth that may come from ecoefficiency may result in more products being manufactured, which may result in more waste as those products are discarded by consumers.
- C The passage does not suggest that ecoefficiency may fail to increase a company's profits.
- D The passage suggests that ecoefficiency has allowed many companies to increase profits, but it does not suggest that eco-inefficient companies are more profitable or competitive in the global marketplace.
- E As with answer choice (A), there is no suggestion that companies are likely to abandon ecoefficient strategies once they have realized increased profits from such strategies.

**The correct answer is B.**

Questions 8–10 refer to the passage on page 368.

8. The primary purpose of the passage is to propose
- (A) an alternative to museum display of artifacts
  - (B) a way to curb illegal digging while benefiting the archaeological profession
  - (C) a way to distinguish artifacts with scientific value from those that have no such value
  - (D) the governmental regulation of archaeological sites
  - (E) a new system for cataloging duplicate artifacts

#### Main idea

After identifying in the first paragraph two problems that the field of archaeology faces, the author begins the second paragraph by explicitly stating the purpose of the essay: *I would propose that scientific archaeological expeditions and governmental authorities sell excavated artifacts on the open market.* According to the author, this proposal would both benefit the field of archaeology (line 12) and reduce illegal digging for antiquities (lines 12–13).



- A While explaining in paragraph 5 that museums often store countless artifacts unseen in their basements, the author proposes no alternative for museum display of these artifacts.
- B Correct.** The author argues that selling some antiquities would help archaeology and reduce illegal digging.
- C No proposal for the grading of the artifacts is made in the passage.
- D The author does not discuss governmental regulation of the sites.
- E While the author supports one part of the proposal for selling antiquities by noting that sold artifacts could be cataloged on a computer, this is a detail rather than the main purpose of the passage.

**The correct answer is B.**

9. The author implies that all of the following statements about duplicate artifacts are true EXCEPT
- (A) a market for such artifacts already exists
  - (B) such artifacts seldom have scientific value
  - (C) there is likely to be a continuing supply of such artifacts
  - (D) museums are well supplied with examples of such artifacts
  - (E) such artifacts frequently exceed in quality those already cataloged in museum collections

#### Inference

Duplicate artifacts are discussed throughout the passage. Because this question asks the reader to find the one statement that is NOT stated or implied in the passage, the best approach is to eliminate the four statements that are supported by the passage.

- A In the closing sentence of the passage, the author implies that the market already exists.

- B In lines 27–32, the author suggests selling artifacts that do not have *unique artistic merit or scientific value* and then states that while theoretically every artifact may have potential scientific value, in practice this is not the case. Paragraph 4 illustrates this by mentioning the many thousands of artifacts that are *essentially duplicates of one another*. Lines 51–53 imply that there are rare instances when duplicates do *become needed for scientific purposes*, so duplicates *seldom have scientific value*.
- C This statement is implied in lines 41–43, where the author notes that museum basements are *simply not large enough to store the artifacts that are likely to be discovered in the future*.
- D It can be inferred that if the duplicates cited in paragraph 4 are typical of the kinds of artifacts *stored in bulging museum basements* (lines 48–49), then museums are well supplied with such artifacts.
- E Correct.** The passage does not support the assertion that the quality of duplicate objects is higher than that of museum pieces.

**The correct answer is E.**

10. Which of the following is mentioned in the passage as a disadvantage of storing artifacts in museum basements?
- (A) Museum officials rarely allow scholars access to such artifacts.
  - (B) Space that could be better used for display is taken up for storage.
  - (C) Artifacts discovered in one excavation often become separated from each other.
  - (D) Such artifacts are often damaged by variations in temperature and humidity.
  - (E) Such artifacts often remain uncataloged and thus cannot be located once they are put in storage.

**Supporting ideas**

This question asks for specific information stated in the passage, so begin by finding the discussion of museum storage in the fifth paragraph. There, the author exposes the problems museums face: too little room and too little money. Not enough funding exists to catalog artifacts, so the artifacts *become as inaccessible as if they had never been discovered* (lines 45–46).

- A Restrictions on scholars' access to the museums' artifacts are not mentioned in the passage.
- B The author does not argue that museums should use space differently.
- C No mention is made of the separation of objects from the same excavation.
- D The author does not discuss the conditions of storage.
- E **Correct.** The author contends that many artifacts are left uncataloged and so, once shelved in the basements, they cannot be found.

**The correct answer is E.**

Questions 11–13 refer to the passage on page 370.

11. According to the passage, the difference in the amount of cratering on Callisto's and Io's respective surfaces can probably be explained by the difference between these two moons with respect to which of the following factors?
- (A) Size
  - (B) Ice content
  - (C) The rate of bombardment by comets and asteroids
  - (D) The influence of Jupiter's other moons
  - (E) The level of geological activity

**Supporting idea**

Cratering is discussed in the second paragraph. The passage states that Callisto is heavily cratered, while Io has no detectable craters. Io is the moon closest to Jupiter, and Callisto is the farthest away. Their relative positions are accompanied by a corresponding difference in geological activity: Io is very geologically active, while Callisto is not active at all. Io's geological activity means that it is being regularly resurfaced, so it is unlikely to retain any evidence of cratering—unlike Callisto, which experiences no resurfacing, leaving its craters intact.

- A While the passage makes clear that Callisto is larger than Io, it does not address whether their relative size explains the difference in their respective amounts of cratering.
- B According to the passage, Callisto and Io differ in terms of their ice content, but nothing in the passage indicates that that content affects the cratering on their surfaces.
- C The passage states that Io experiences a higher rate of bombardment than Callisto does, but while that bombardment most likely causes cratering on Io, its surface does not retain those craters. Thus, the rate of bombardment does not, in itself, explain the difference in cratering on the surface of the two moons.
- D The only other moons of Jupiter discussed in the passage are Ganymede and Europa, and the passage does not consider their effect on the cratering of Callisto and Io.
- E **Correct.** Because Io experiences a high degree of geological activity, its surface is continuously resurfaced, which means that the surface shows no craters. Callisto, on the other hand, is not geologically active and thus is not resurfaced regularly, which explains why its surface is heavily cratered.

**The correct answer is E.**



12. Which of the following best describes the purpose of the second paragraph of the passage?
- (A) To provide further evidence of the systematic variation in the characteristics of Jupiter's four largest moons
  - (B) To present a comprehensive theory to explain the systematic variation in the characteristics of Jupiter's four largest moons
  - (C) To explain the significance of the systematic variation in the characteristics of Jupiter's four largest moons
  - (D) To introduce facts that contradict conventional assumptions about Jupiter's four largest moons
  - (E) To contrast the characteristics of Jupiter's four largest moons with the characteristics of the planets of the solar system

#### Evaluation

This question depends on understanding how the second paragraph functions in the context of the passage as a whole. The first paragraph discusses the way in which the composition of Jupiter's four largest moons varies with distance from Jupiter, and the second paragraph extends the idea of distance-based variation to geological activity and surface appearance.

- A **Correct.** The second paragraph presents evidence related to the amount of geological activity and surface cratering in order to extend the first paragraph's suggestion that the characteristics of Jupiter's four largest moons vary systematically based on their distance from Jupiter.
- B The passage does not offer a theory to account for the systematic variation in the characteristics of Jupiter's largest moons; it merely describes several instances of that variation.
- C The second paragraph provides more examples of the systematic variation in the characteristics of Jupiter's largest moons rather than explaining that variation's significance.

- D The passage describes Jupiter's moons but does not identify any conventional assumptions about those moons that are contradicted by facts introduced in the passage.
- E The first paragraph suggests that Jupiter's moons exhibit differences in characteristics that are more "systematic" than are those of the planets in the solar system, but the characteristics are not themselves contrasted; in fact, the first paragraph suggests that they are similar. The second paragraph does not discuss the planets of the solar system at all.

**The correct answer is A.**

13. The author's reference to Jupiter's gravity in line 25 serves primarily to
- (A) indicate why the absence of craters on Io's surface is surprising
  - (B) explain the presence of craters on the surface of Jupiter's four largest moons
  - (C) provide an explanation for the lack of geological activity on Callisto
  - (D) contrast Jupiter's characteristics with the characteristics of its four largest moons
  - (E) illustrate the similarity between Jupiter's four largest moons and the planets of the solar system

#### Evaluation

The reference to Jupiter's gravity is part of the author's discussion of cratering on Jupiter's moons; Jupiter's gravity is strong enough to attract comets and asteroids that then bombard its inner moons. A high bombardment rate would seem to indicate that a great deal of cratering would occur on those inner moons, and yet the passage reports that, unexpectedly, on the innermost moon, Io, no craters have been detected.

- A Correct.** Jupiter's gravity attracts comets and asteroids, which increases the bombardment rate of its inner moons, including Io. This bombardment makes it surprising that Io's surface shows no cratering.
- B** The passage discusses the likely effect of Jupiter's gravity on its inner moons but not its outer moons; two of the large moons the passage discusses are outer moons.
- C** According to the passage, Callisto, an outer moon, lacks geological activity because of its distance from Jupiter; Jupiter's gravity is not offered as a contributing factor to this inactivity.
- D** The passage does not contrast Jupiter with its moons; rather, it compares the moons to one another.
- E** The first paragraph of the passage suggests that Jupiter's moons vary in a way similar to that of the planets of the solar system, but the author does not refer to Jupiter's gravity to illustrate the similarity in this variation.

**The correct answer is A.**

Questions 14–17 refer to the passage on page 372.

14. According to the passage, which of the following contributed to Marcus Garvey's success?
- (A) He introduced cultural and historical consciousness to the African American community.
- (B) He believed enthusiastically in the traditional American success ethos.
- (C) His audience had already formed a consciousness that made it receptive to his message.
- (D) His message appealed to critics of African American support for United States military involvement in the First World War.
- (E) He supported the movement to protest segregation that had emerged prior to his arrival in the United States.

### Supporting idea

To answer this question, find what the passage states explicitly about how Marcus Garvey achieved his success. The passage begins by stating that Garvey arrived at the right time: that returning African American soldiers were primed to receive what he had to say about the African American community. These soldiers already held strong beliefs about their rights to opportunities for success; the passage concludes that the divide between the soldiers' expectations and their experiences led to Garvey's success.

- A** The passage states that African American people were in possession of a strong cultural and historical consciousness prior to Garvey's arrival in the United States.
- B** The passage attributes belief in the traditional American success ethos to African American people who joined the armed forces; it does not mention Garvey's beliefs on this subject.
- C Correct.** African American soldiers who had experienced segregation during the First World War were ready to hear what Garvey had to say.
- D** Critics of African American support for United States involvement in the First World War are not mentioned in the passage.
- E** While Garvey most likely would have supported a movement to protest segregation, such a movement is not discussed in the passage.

**The correct answer is C.**

15. The passage suggests that many African American people responded to their experiences in the armed forces in which of the following ways?

- (A) They maintained as civilians their enthusiastic allegiance to the armed forces.
- (B) They questioned United States involvement in the First World War.
- (C) They joined political organizations to protest the segregation of African American troops and the indignities they suffered in the military.
- (D) They became aware of the gap between their expectations and the realities of American culture.
- (E) They repudiated Garvey's message of pride and unity.

#### Inference

According to the passage, African Americans enthusiastically joined the armed services but were confronted with continued segregation, both in the military and when they returned home. The passage does not explicitly state their response to these experiences, but a response can be inferred. The second paragraph, refers to anthropologist Anthony F. C. Wallace, who argued that a revitalization movement may be brought about by the perception of a gap between expectations and reality, and such a revitalization did occur in African American communities following the First World War; thus, many African American people may have become aware of a gap such as Wallace described.

- A The passage states that African American troops experienced segregation and other indignities while in the military; these experiences could reasonably be inferred to have dampened their enthusiasm for the armed forces. Regardless, the passage does not suggest an enthusiastic allegiance.
- B The passage describes African American people's enthusiasm about joining the military. Although they experienced segregation and other indignities while in the military, the passage does not suggest that their opinion about involvement in the war changed.

- C While African American troops may have joined political organizations, the passage does not provide any actual evidence of this having occurred.

**D Correct.** The fact that, as the passage states, a revitalization movement occurred in the African American community following the First World War suggests that the returning soldiers did become aware of the gap between their expectations of an improved situation with regard to segregation and the reality of continued segregation in the United States.

- E The passage does not suggest that African American troops repudiated Garvey's message. On the contrary, it states that Garvey built *the largest revitalization movement in African American history*. This suggests that the members of the African American community, including the returning soldiers, were extremely receptive to Garvey's message.

**The correct answer is D.**

16. It can be inferred from the passage that the "scholars" mentioned in line 24 believe which of the following to be true?

- (A) Revitalization resulted from the political activism of returning African American soldiers following the First World War.
- (B) Marcus Garvey had to change a number of prevailing attitudes in order for his mass movement to find a foothold in the United States.
- (C) The prevailing sensibility of the African American community provided the foundation of Marcus Garvey's political appeal.
- (D) Marcus Garvey hoped to revitalize consciousness of cultural and historical identity in the African American community.
- (E) The goal of the mass movement that Marcus Garvey helped bring into being was to build on the pride and unity among African Americans.

**Inference**

To determine what it is logical to infer regarding the scholars discussed in the third paragraph, look at the context in which they are mentioned. According to the passage, these scholars argue that Garvey was responsible for creating a particular consciousness within the African American community, a consciousness that the passage identifies as *identity, strength, and [a] sense of history*. Unlike the passage author, these scholars believe strongly in Garvey's responsibility for this consciousness, so they would most likely reject any suggestion that it existed prior to his arrival and activism.

- A According to the passage, the scholars believe that Garvey was responsible for the creation of the consciousness that led to revitalization, which suggests that revitalization resulted from Garvey's activism, not soldiers' activism.
- B Correct.** According to the passage, the scholars believe that Garvey created the consciousness that led to his revitalization movement. This suggests that he had to change prevailing attitudes in order to foster this new consciousness.
- C According to the passage, the scholars believe that Garvey created a new consciousness in the African American community; thus, the prevailing sensibility could not have provided a foundation for his appeal.
- D According to the passage, the scholars believe that Garvey built his revitalization movement on a new consciousness of cultural and historical identity, not a previously existing one.
- E According to the passage, the scholars' position is that Garvey's movement was built on a new sense of pride and unity that he provided, and that that sense did not precede Garvey's work.

**The correct answer is B.**

17. According to the passage, many African American people joined the armed forces during the First World War for which of the following reasons?

- (A) They wished to escape worsening economic conditions in African American communities.
- (B) They expected to fulfill ideals of personal attainment.
- (C) They sought to express their loyalty to the United States.
- (D) They hoped that joining the military would help advance the cause of desegregation.
- (E) They saw military service as an opportunity to fulfill Marcus Garvey's political vision.

**Supporting idea**

This question depends on identifying what the passage states directly about African American people's reasons for joining the armed forces. The reason offered by the passage is that the African American people who entered the armed forces did so because they were *hoping to participate in the traditional American ethos of individual success*.

- A Although this is a plausible reason for entering the armed forces, the passage does not discuss economic conditions.
- B Correct.** The passage states that African American people who joined the armed forces during the First World War wanted to achieve individual success.
- C The passage does not discuss African American people's loyalty to the United States.
- D The passage states that African American troops experienced segregation, but it does not suggest that they had hoped their joining the military would promote desegregation.
- E The passage suggests that African American troops did not become aware of Marcus Garvey's political vision until after they returned from the First World War.

**The correct answer is B.**



Questions 18–25 refer to the passage on page 374.

18. The passage provides information in support of which of the following assertions?

- (A) The disadvantages of an adaptation to a particular feature of an environment often outweigh the advantages of such an adaptation.
- (B) An organism's reaction to being placed in an environment to which it is not well adapted can sometimes illustrate the problems that have been solved by the adaptations of organisms indigenous to that environment.
- (C) The effectiveness of an organism's adaptation to a particular feature of its environment can only be evaluated by examining the effectiveness with which organisms of other species have adapted to a similar feature of a different environment.
- (D) Organisms of the same species that inhabit strikingly different environments will often adapt in remarkably similar ways to the few features of those environments that are common.
- (E) Different species of organisms living in the same environment will seldom adapt to features of that environment in the same way.

#### Application

This question requires recognizing a principle underlying the passage's overall discussion. The passage makes a general claim about terrestrial animals' need to overcome the effect of gravity on their blood circulation systems, and it then uses the specific example of terrestrial snakes to illustrate this claim. To help identify the adaptations used by terrestrial snakes, the passage describes what happens to sea snakes, which are aquatic and less affected by gravity's influence, when they are subjected to a terrestrial environment. The specific problems faced by these snakes strongly suggest that terrestrial snakes have developed ways to overcome these problems. The passage then identifies specific physiological differences between sea snakes and terrestrial snakes that demonstrate how terrestrial snakes overcome gravity's influence.

- A The passage discusses how species have successfully adapted to their specific environments and does not mention that these adaptations create disadvantages in that environment.
- B **Correct.** The passage discusses the problems faced by sea snakes when they are subjected to a terrestrial environment and then examines terrestrial snakes to illustrate how certain adaptations solved these problems.
- C The passage is not concerned with evaluating the effectiveness of species' adaptations to their environments; it takes for granted that these adaptations are effective.
- D The passage is concerned with how species adapt differently to different environments and not with how adaptations to different environments are similar.
- E The passage discusses how different environments affect how species have adapted, not how different species adapt to a similar environment.

The correct answer is B.

19. According to the passage, one reason that the distribution of blood in the sea snake changes little while the creature remains in the ocean is that

- (A) the heart of the sea snake tends to be located near the center of its body
- (B) pressure gradients in the water surrounding the sea snake counter the effects of vertical pressure gradients within its blood vessels
- (C) the sea snake assumes a vertical posture less frequently than do the terrestrial and the arboreal snake
- (D) the sea snake often relies on waves of muscle contractions to help move blood from the torso to the head
- (E) the force of pressure gradients in the water surrounding the sea snake exceeds that of vertical pressure gradients within its circulatory system



**Supporting ideas**

This question asks for an identification of factual information in the passage. Given that the contrast between sea snakes and terrestrial snakes is being used to identify adaptations used by terrestrial animals to overcome the effect of gravity on their circulation systems, the passage needs initially to illustrate why it is that sea snakes are not confronted with the same problems that gravity causes for terrestrial snakes. This information therefore needs to come fairly early in the passage.

- A The passage identifies the location of a sea snake's heart as a factor that minimizes the effort required to pump blood to both extremities but not as a cause of the even distribution of blood in sea snakes.
- B **Correct.** The passage states explicitly in lines 11–17 that while sea snakes are in the ocean, the vertical pressure gradients in their blood vessels are counteracted by the pressure gradients in the water.
- C The passage does not discuss the frequency with which any snakes assume certain postures.
- D The passage discusses muscle contractions only in relation to arboreal snakes.
- E The passage states that the vertical pressures within sea snakes' blood vessels are *counteracted* (line 13) by the water's pressure, which suggests that the pressures are equalized, not that one force exceeds the other.

**The correct answer is B.**

20. It can be inferred from the passage that which of the following is true of species of terrestrial snakes that often need to assume a vertical posture?

- (A) They are more likely to be susceptible to circulatory failure in vertical postures than are sea snakes.
- (B) Their hearts are less likely to be located at the midpoint of their bodies than is the case with sea snakes.
- (C) They cannot counteract the pooling of blood in lower regions of their bodies as effectively as sea snakes can.

- (D) The blood pressure at their midpoint decreases significantly when they are tilted with their heads up.
- (E) They are unable to rely on muscle contractions to move venous blood from the lower torso to the head.

**Inference**

This question requires using information given about how arboreal snakes, which are frequently in vertical postures, have adapted to gravity's influence to make an assumption that other terrestrial snakes that are frequently in these postures are likely to have similar adaptations. The passage implies that sea snakes have hearts at the midpoint of their bodies because the water's pressure gradients help distribute blood evenly. It then illustrates that arboreal snakes have hearts closer to their heads to help keep blood flowing to their brain when they are in vertical postures.

- A The passage does not suggest that any of the snakes mentioned are ill-adapted to their particular environments.
- B **Correct.** The passage states that arboreal snakes have hearts close to their heads and not at the midpoints of their bodies, so it is reasonable to conclude that any terrestrial snake that frequently assumes vertical postures would be unlikely to have hearts at their bodies' midpoint.
- C As with answer choice (A), the passage does not suggest that any species of snake is ill-adapted to its environment.
- D The passage states that sea snakes lose pressure at their midpoints when they are tilted on land with heads up but that terrestrial snakes do not have this problem.
- E Because arboreal snakes use muscle contractions to circulate blood when they are vertical, it is likely that most terrestrial snakes that frequently assume vertical postures also have this capability.

**The correct answer is B.**

21. The author describes the behavior of the circulatory system of sea snakes when they are removed from the ocean (see lines 17–20) primarily in order to
- (A) illustrate what would occur in the circulatory system of terrestrial snakes without adaptations that enable them to regulate their blood pressure in vertical orientations
  - (B) explain why arboreal snakes in vertical orientations must rely on muscle contractions to restore blood pressure to the brain
  - (C) illustrate the effects of circulatory failure on the behavior of arboreal snakes
  - (D) illustrate the superiority of the circulatory system of the terrestrial snake to that of the sea snake
  - (E) explain how changes in spatial orientation can adversely affect the circulatory system of snakes with hearts located in relatively close proximity to their heads

#### Evaluation

Answering this question requires understanding why sea snakes have been brought into the passage's overall discussion about how terrestrial animals have overcome the influence of gravity on their blood circulation. The passage uses the effects that gravity has on sea snakes when they are taken out of water to identify problems that terrestrial snakes must have adapted to in order to survive.

- A Correct.** The passage uses the problems sea snakes have when taken out of water to illustrate that without certain adaptations, terrestrial snakes would likely have similar problems.
- B** The passage discusses sea snakes to illustrate problems faced by terrestrial snakes, not to explain how terrestrial snakes have adapted to gravity's influence.
- C** The passage does not discuss the effects of circulatory failure on arboreal snakes.
- D** The passage does not compare or contrast the effectiveness of the various adaptations used by different snakes.
- E** The passage does not imply that snakes with hearts close to their heads are adversely affected by spatial positions.

The correct answer is A.

22. It can be inferred from the passage that which of the following is a true statement about sea snakes?
- (A) They frequently rely on waves of muscle contractions from the lower torso to the head to supplement the work of the heart.
  - (B) They cannot effectively regulate their blood pressure when placed in seawater and tilted at an angle with the head pointed downward.
  - (C) They are more likely to have a heart located in close proximity to their heads than are arboreal snakes.
  - (D) They become acutely vulnerable to the effects of gravitational pressure on their circulatory system when they are placed in a terrestrial environment.
  - (E) Their cardiovascular system is not as complicated as that of arboreal snakes.

#### Inference

Answering this question requires understanding why sea snakes are discussed in the passage and what happens to them when they are taken out of water and subjected to the force of gravity. The second paragraph implies strongly that sea snakes will not survive certain terrestrial situations for which they are not adapted.

- A** The passage associates muscle contractions to circulate blood with arboreal snakes only.
- B** According to the passage, sea snakes' inability to regulate blood pressure occurs only when they are taken out of water.
- C** The passage states clearly that arboreal snakes have hearts closer to their heads than do sea snakes.
- D Correct.** The passage states that in certain postures, sea snakes placed in a terrestrial environment will lose all blood pressure at their brains, which is an acute vulnerability.
- E** The passage does not provide the information needed to compare the complexity of the various snakes discussed.

The correct answer is D.

23. The author suggests that which of the following is a disadvantage that results from the location of a snake's heart in close proximity to its head?
- (A) A decrease in the efficiency with which the snake regulates the flow of blood to the brain
  - (B) A decrease in the number of orientations in space that a snake can assume without loss of blood flow to the brain
  - (C) A decrease in blood pressure at the snake's midpoint when it is tilted at various angles with its head up
  - (D) An increase in the tendency of blood to pool at the snake's head when the snake is tilted at various angles with its head down
  - (E) An increase in the amount of effort required to distribute blood to and from the snake's tail

#### Inference

This question asks for an inference about the location of a snake's heart being closer to the brain than to the midpoint of its body. In the third paragraph, the passage states that in terrestrial snakes, which must fight the influence of gravity, the closer proximity of the heart to the head ensures blood circulation to the brain. The passage notes, however, that this makes it more difficult for such snakes to maintain blood circulation to the tail.

- A The passage states that snakes have brains closer to their heads to more efficiently circulate blood to the brain.
- B The passage suggests that having the heart close to the head increases the spatial orientations a snake can assume without losing blood flow to the brain, rather than decreases the number of orientations.
- C The passage indicates that this is true only of sea snakes with hearts near their body's midpoint.
- D The passage mentions blood pooling in the lower portions of a terrestrial organism's body but does not imply that blood can pool at a snake's head.
- E **Correct.** Because, as the passage states, it is more difficult for a snake with its heart close to its head to circulate blood to the tail, and therefore its body is likely to put more effort into circulating blood to the tail.

The correct answer is E.

24. The primary purpose of the third paragraph is to
- (A) introduce a topic that is not discussed earlier in the passage
  - (B) describe a more efficient method of achieving an effect discussed in the previous paragraph
  - (C) draw a conclusion based on information elaborated in the previous paragraph
  - (D) discuss two specific examples of phenomena mentioned at the end of the previous paragraph
  - (E) introduce evidence that undermines a view reported earlier in the passage

#### Evaluation

Answering this question requires recognizing how the passage develops its main point. The first paragraph sets up a general claim about gravity's influence on terrestrial organisms. The second paragraph then describes the ill effects that gravity has on sea snakes to identify problems that terrestrial snakes have had to adapt to. The third paragraph then uses examples to illustrate how terrestrial snakes have adapted to gravity's influence.

- A The topic of the third paragraph is the adaptations developed by terrestrial snakes to survive gravity's influence, which is part of the discussion in both the first and second paragraphs.
- B There is no comparison in the passage of the efficiency of the different methods used by snakes to adapt to gravity's influence.
- C The third paragraph is concerned with illustrating certain adaptations used by snakes and offers no conclusions about the problems terrestrial snakes have had to adapt to, which is the topic of the second paragraph.
- D **Correct.** The end of the second paragraph refers to *certain adaptations* (line 23) that the third paragraph then goes on to identify and discuss.
- E The third paragraph supports the main idea of the passage and is not used to counter any claim made earlier.

The correct answer is D.

25. In the passage, the author is primarily concerned with doing which of the following?

- (A) Explaining adaptations that enable the terrestrial snake to cope with the effects of gravitational pressure on its circulatory system
- (B) Comparing the circulatory system of the sea snake with that of the terrestrial snake
- (C) Explaining why the circulatory system of the terrestrial snake is different from that of the sea snake
- (D) Pointing out features of the terrestrial snake's cardiovascular system that make it superior to that of the sea snake
- (E) Explaining how the sea snake is able to neutralize the effects of gravitational pressure on its circulatory system

#### Main idea

Answering this question involves assessing what the passage as a whole is attempting to do. While the passage begins by making a general claim about gravity's influence on the cardiovascular systems of terrestrial animals, it immediately points to terrestrial snakes as a good example supporting this claim. The rest of the passage is then devoted to illustrating, using the observations involving sea snakes, how gravity's influence has shaped the cardiovascular systems of terrestrial snakes.

- A **Correct.** The entire passage is devoted to an explanation of how terrestrial snakes have adapted to gravity's influence.
- B While the passage does compare the systems of the two snakes, it does so for the larger purpose of demonstrating gravity's influence on terrestrial snakes.
- C The passage is more concerned with *how* the systems of the two snakes are different, rather than *why*, in order to identify how terrestrial snakes have adapted to gravity's influence.
- D There is no judgment in the passage as to the superiority of one snake's system over the other.
- E While the passage does explain how sea snakes do this, it does so only for the larger purpose of identifying how terrestrial snakes have adapted to gravity's influence.

The correct answer is A.

Questions 26–30 refer to the passage on page 378.

26. The author of the passage is primarily concerned with

- (A) discussing research data underlying several definitions
- (B) arguing for the adoption of a particular definition
- (C) exploring definitions of a concept
- (D) comparing the advantages of several definitions
- (E) clarifying some ambiguous definitions

#### Main idea

The author's primary concern is found by considering the passage as a whole. In the first paragraph, the author raises the central question regarding the meaning of *services* and then examines two definitions. The second paragraph analyzes the United States government's definition of *services* in more detail. The author is primarily interested in exploring different definitions of *services*.

- A No research data are presented.
- B The author points out the weakness of several definitions rather than giving reasons to adopt a particular one.
- C **Correct.** The author considers several definitions of *services*.
- D The author largely analyzes the disadvantages of the definitions.
- E The author points out problems in the definitions rather than providing clarifications of the definitions themselves.

The correct answer is C.

27. In comparing the United States government's definition of services with the classical definition, the author suggests that the classical definition is

- (A) more pragmatic
- (B) more difficult to apply
- (C) less ambiguous
- (D) more widely used
- (E) more arbitrary



**Inference**

This question asks the reader to find information that is suggested but not directly stated in the passage. The author discusses the classical definition at the end of the first paragraph, pointing out two examples in which it does not apply and concluding that this definition is *hard to sustain*. By comparison, the government's definition is *more practical* because it is easy to apply; everything that is not agriculture or industry is defined as a service. An examination of the analysis of both definitions reveals that, according to the author, the classical definition is harder to apply.

- A The author describes the United States government's definition as *more practical* or pragmatic.
- B **Correct.** Citing two cases in which the classical definition does not apply, the author implies that this definition is harder to apply than the government's.
- C Although the United States government's definition is said to lead to *ambiguities*, the examples given to suggest difficulties with the classical definition indicate that it may be at least as ambiguous.
- D The author does not say that the classical definition is more widely used.
- E The author calls the government's definition arbitrary.

**The correct answer is B.**

28. The passage suggests which of the following about service workers in the United States?

- (A) The number of service workers may be underestimated by the definition of services used by the government.
- (B) There were fewer service workers than agricultural workers before 1988.
- (C) The number of service workers was almost equal to the number of workers employed in manufacturing until 1988.
- (D) Most service workers are employed in service occupations rather than in service industries.
- (E) Most service workers are employed in occupations where they provide services that do not fall under the classical definition of services.

**Inference**

The question's use of the word *suggests* means that the answer depends on making an inference. According to the author, one of the failures of the government's definition of services is that *the many service workers employed by manufacturers—bookkeepers or janitors, for example—would fall under the industrial rather than the services category* (lines 22–26). This example shows that the number of service workers is likely to be underestimated.

- A **Correct.** Because some service workers are included in the industrial category, it is possible that the total number of service workers may be underestimated.
- B The passage does not provide the information to support this statement.
- C The author says that services moved ahead of manufacturing as the *main product* in 1988 but does not discuss the number of workers in either area.
- D The passage does not provide the information to support this statement.
- E The passage does not provide the information to support this statement.

**The correct answer is A.**

29. The author of the passage mentions which of the following as one disadvantage of the United States government's definition of services?

- (A) It is less useful than the other definitions mentioned in the passage.
- (B) It is narrower in scope than the other definitions mentioned in the passage.
- (C) It is based on the final product produced rather than on the type of work performed.
- (D) It does not recognize the diversity of occupations within the service industries.
- (E) It misclassifies many workers who are employed in service industries.



## Supporting ideas

This question is based on specific information explicitly stated in the passage. According to the author, the government's definition fails because *it categorizes workers based on their company's final product rather than on the actual work the employees perform* (lines 20–22).

- A The author calls this definition *practical for government purposes*, so for the government it is more useful than other definitions.
- B The definition *includes everything that is not agriculture or industry*, while the classical definition does not include occupations that are clearly services; the government's definition is thus not narrower.
- C **Correct.** Workers are categorized by the final product of their company rather than by the type of work they perform at that company.
- D Diversity of occupations within the service industries is not discussed.
- E The definition misclassifies service workers employed in manufacturing, not service industries.

**The correct answer is C.**

30. The author refers to “service workers employed by manufacturers” (line 23) primarily in order to point out

- (A) a type of worker not covered by the United States government's system of classifying occupations
- (B) a flaw in the United States government's definition of services
- (C) a factor that has influenced the growth of the service economy in the United States
- (D) a type of worker who is classified on the basis of work performed rather than on the basis of the company's final product
- (E) the diversity of the workers who are referred to as service workers

## Logical structure

The author discusses *the many service workers employed by manufacturers* to illustrate the failure of the government's definition to distinguish between service industries and service occupations. The resulting ambiguities, in the author's view, reveal the *arbitrariness* of the definition and its inaccuracy in reflecting the composition of the economy.

- A The worker is covered but misclassified.
- B **Correct.** The author uses this example to point out a serious shortcoming in the government's definition.
- C The author mentions the growth of services at the beginning of the passage but does not explore the reasons for it.
- D The situation of service workers employed by manufacturers is just the reverse; they are categorized by the company's final product, not by the work they do.
- E The author had earlier cited and illustrated the diversity of service activities that are included in the government's residual category of services; the focus here is instead the arbitrariness and inaccuracy, in the author's view, of the government's definition.

**The correct answer is B.**

Questions 31–36 refer to the passage on page 380.

31. The passage is primarily concerned with

- (A) contrasting the benefits of one methodology with the benefits of another
- (B) describing the historical origins and inherent drawbacks of a particular methodology
- (C) discussing the appeal of a particular methodology and some concerns about its use
- (D) showing that some historians' adoption of a particular methodology has led to criticism of recent historical scholarship
- (E) analyzing the influence of current feminist views on women's interpretations of their experience

**Main idea**

This question asks for an abstract view of what the passage as a whole is primarily doing. The passage introduces a particular methodology that scholars of women's history have been encouraged to employ, explaining why the use of the methodology is supported. The passage then goes on to raise some concerns about the use of the methodology and cites one example in which caution is needed.

- A The passage is primarily concerned with only one methodology.
- B The passage mentions why the methodology had been encouraged but does not give the history of its origins; while it cautions historians to employ the methodology carefully, it is not concerned with drawbacks of its proper use.
- C **Correct.** The passage discusses why the use of a methodology is being encouraged and then offers some concerns about its use.
- D The passage does not discuss any criticism of recent scholarship in women's history.
- E There is no mention in the passage that feminist theory is influencing how women in general think about their experiences.

**The correct answer is C.**

32. According to the passage, which of the following shapes the oral narratives of women storytellers?
- (A) The conventions for standard histories in the culture in which a woman storyteller lives
  - (B) The conventions of storytelling in the culture in which a woman storyteller lives
  - (C) A woman storyteller's experience with distinctive traditions of storytelling developed by the women in her family of origin
  - (D) The cultural expectations and experiences of those who listen to oral narratives
  - (E) A woman storyteller's familiarity with the stories that members of other groups in her culture tell to explain themselves

**Supporting ideas**

This question asks for an identification of specific information provided by the passage. In the second paragraph, the passage describes certain concerns about using oral narratives. One of these concerns is that *the stories people tell to explain themselves are shaped by ... storytelling conventions* (lines 17–19) and other influences tied to the teller's cultural and historical context.

- A The passage uses *standard histories* (line 7) to refer to the usual work of scholars and not to something that influences oral narratives.
- B **Correct.** The passage raises as a concern that oral narratives may be influenced by storytelling conventions present in the culture of the speaker.
- C The passage does not mention the family of origin of women storytellers.
- D The passage does not mention the expectations of the listeners of oral narratives.
- E The passage does not discuss women storytellers' familiarity with the oral narratives belonging to other groups of women.

**The correct answer is B.**

33. The author of the passage would be most likely to make which of the following recommendations to scholars of women's history?
- (A) They should take into account their own life experiences when interpreting the oral accounts of women's historical experiences.
  - (B) They should assume that the observations made in women's oral narratives are believed by the intended audience of the story.
  - (C) They should treat skeptically observations reported in oral narratives unless the observations can be confirmed in standard histories.
  - (D) They should consider the cultural and historical context in which an oral narrative was created before arriving at an interpretation of such a narrative.
  - (E) They should rely on information gathered from oral narratives only when equivalent information is not available in standard histories.

**Application**

Answering this question involves recognizing what the author believes about oral narratives and then applying this belief to a hypothetical situation in which the author makes recommendations to scholars of women's history. While acknowledging the appeal of oral narratives to these scholars, in the second paragraph the author urges caution when using these narratives as sources of *disinterested commentary* (line 16). The passage then states that people's oral narratives are shaped by *cultural and historical factors* (line 20), which presumably relate to the cultural and historical context within which the narratives are spoken.

- A The passage does not mention the personal life experiences of scholars.
- B The passage does not mention the intended audiences of oral narratives.
- C The passage mentions *standard histories* (line 7) only as a reference to scholarly works that often have shortcomings.
- D **Correct.** The passage cautions that oral narratives may be biased due to cultural and historical factors, and it is therefore reasonable to suppose that the author would recommend that scholars consider this when using such information.
- E The passage does not refer to oral narratives as being valuable only for filling a gap in the available historical record.

**The correct answer is D.**

34. Which of the following best describes the function of the last sentence of the passage?

- (A) It describes an event that historians view as crucial in recent women's history.
- (B) It provides an example of how political rhetoric may influence the interpretations of experience reported in women's oral narratives.
- (C) It provides an example of an oral narrative that inaccurately describes women's experience during a particular historical period.

- (D) It illustrates the point that some women are more aware than others of the social forces that shape their oral narratives.
- (E) It identifies the historical conditions that led to the social acceptance of women's paid work outside the home.

**Evaluation**

This question requires recognizing how a particular part of the passage is related to the overall reasoning in the passage. The first paragraph introduces a methodology and describes the methodology's appeal. The second paragraph then raises concerns about the use of the methodology, drawing attention to the cultural and historical bias that may be present in oral narratives. In line 21, the passage refers specifically to the influence *political rhetoric* may have on a woman's understanding of her experience. In the final sentence, the passage provides a specific hypothetical example of a woman at the time of the Second World War to illustrate this concern.

- A The last sentence employs a hypothetical example and does not describe a particular event as being important to historians.
- B **Correct.** After contending that political rhetoric may influence oral narratives, the passage uses the example of the Second World War in the final sentence to support this claim.
- C The last sentence does not provide a particular example of an oral narrative.
- D The passage does not claim that some women are more aware than others of the social forces that may bear on them.
- E The passage does not claim that social conditions during the Second World War led to acceptance of women in the workplace.

**The correct answer is B.**

35. According to the passage, scholars of women's history should refrain from doing which of the following?

- (A) Relying on traditional historical sources when women's oral narratives are unavailable
- (B) Focusing on the influence of political rhetoric on women's perceptions to the exclusion of other equally important factors
- (C) Attempting to discover the cultural and historical factors that influence the stories women tell
- (D) Assuming that the conventions of women's written autobiographies are similar to the conventions of women's oral narratives
- (E) Accepting women's oral narratives less critically than they accept women's written histories

#### Inference

Answering this question requires recognizing which option is directly inferable from information in the passage. After describing in the first paragraph why oral narratives are appealing to historians, the passage begins the second paragraph by imploring scholars of women's history to *be as cautious about accepting oral narratives ... as ... written memories* (lines 12–14). The passage then goes on to describe potential bias in oral narratives, suggesting that scholars should be as critical of them as they are of written sources.

- A The passage does not claim that traditional historical sources should be avoided by scholars.
- B The passage mentions the influence of political rhetoric merely as one example of potential bias.
- C The passage suggests that scholars *should* attempt to be aware of cultural and historical factors.
- D The passage does not discuss the conventions of women's written autobiographies.
- E **Correct.** The passage implies that written histories and oral narratives should receive the same level of critical scrutiny by scholars.

The correct answer is E.

36. According to the passage, each of the following is a difference between women's oral narratives and most standard histories EXCEPT:

- (A) Women's oral histories validate the significance of women's achievements.
- (B) Women's oral histories depict experience from the point of view of women.
- (C) Women's oral histories acknowledge the influence of well-known women.
- (D) Women's oral histories present today's women with a sense of their historical relationship to women of the past.
- (E) Women's oral histories are crucial to the collective identity of today's women.

#### Supporting ideas

This question asks for information that is stated in the passage, and it requires a process of elimination. In line 7, oral narratives are presented as being *unlike most standard histories*, and the passage then goes on in lines 7–11 to list characteristics of oral histories that most standard histories do not have. The answer to this question will therefore contain a characteristic of women's oral histories that is not described in lines 7–11.

- A The passage states that, unlike most standard histories, women's oral histories *affirm the importance of women's contributions* (lines 8–9).
- B The passage states that, unlike most standard histories, women's oral histories *represent experience from the perspective of women* (lines 7–8).
- C **Correct.** The passage does not mention the influence of well-known women on women's oral histories.
- D The passage states that, unlike most standard histories, women's oral histories *furnish present-day women with historical continuity* (lines 9–10).
- E The passage states that, unlike most standard histories, women's oral histories furnish a historical sense that is *essential to their identity, individually and collectively* (line 11).

The correct answer is C.



Questions 37–41 refer to the passage on page 382.

37. The passage suggests that in order for a manufacturer in a capital-intensive industry to have a decisive advantage over competitors making similar products, the manufacturer must

- (A) be the first in the industry to build production facilities of theoretically optimal size
- (B) make every effort to keep fixed and sunk costs as low as possible
- (C) be one of the first to operate its manufacturing plants at minimum efficient scale
- (D) produce goods of higher quality than those produced by direct competitors
- (E) stockpile raw materials at production sites in order to ensure a steady flow of such materials

#### Inference

This question asks for an inference about what a manufacturer in a capital-intensive industry must do to have an advantage over competitors making similar products. The passage addresses this question by stating that advantage accrues to those firms that are the first to exploit the full potential of optimally sized, technologically sophisticated plants. In this context, exploiting the full potential of such plants means operating them at *minimum efficient scale*. Based on the definition in the first paragraph, this means that the plant must have an output of such a size that the cost per unit of output is at a minimum.

- A The passage says that for new capital-intensive firms to dominate the market, it is not enough for them to have optimally sized plants; the plants must also be operated in a way that fully exploits their potential.
- B While keeping fixed and sunk costs low would obviously help keep overall costs low, the passage does not suggest that this is decisive in enabling a firm to have an advantage over competitors.

C **Correct.** Being among the first manufacturers to operate plants at minimum efficient scale means that those plants are being exploited to their full potential. This strategy would most likely give such manufacturers a decisive advantage over new firms hoping to compete effectively.

D The passage does not discuss the quality of goods made by manufacturers.

E The passage does not suggest that stockpiling raw materials is the most efficient way to ensure a steady flow of raw materials into the manufacturing process, though the passage states that such a steady flow is a factor in achieving minimum efficient scale.

**The correct answer is C.**

38. The passage suggests that which of the following is true of a manufacturer's fixed and sunk costs?

- (A) The extent to which they are determined by market conditions for the goods being manufactured is frequently underestimated.
- (B) If they are kept as low as possible, the manufacturer is very likely to realize significant profits.
- (C) They are the primary factor that determines whether a manufacturer will realize economies of scale.
- (D) They should be on a par with the fixed and sunk costs of the manufacturer's competitors.
- (E) They are not affected by fluctuations in a manufacturing plant's throughput.

#### Inference

This question asks about what the passage implies about fixed and sunk costs. The passage states that when production declines due to certain factors, such costs remain at the same level (which may be high), and the cost per unit produced (*unit costs*) rises sharply.



A The passage discusses the impact of market conditions on determining what the optimal size of a manufacturing plant is (which affects fixed and sunk costs). But it makes no claim about the frequency with which such an impact is “underestimated.”

B The passage emphasizes that failing to keep throughput at an efficiently high level reduces profitability because that failure results in increased cost per unit (to which, of course, the plant’s fixed and sunk costs contribute). But the passage does not claim that keeping aggregate fixed and sunk costs very low is necessary in order to have the most competitive production operation.

C The passage emphasizes that the crucial factor in achieving economies of scale is efficient operation of the production facilities, not the size of the firm’s fixed and sunk costs (even though such costs are clearly in part determined by the size and design of the production facilities).

D While a manufacturer’s fixed and sunk costs may be on a par with those of the manufacturer’s competitors, the passage provides no grounds for inferring that there is any need for them to be (for example, physical plants that employ different technologies may have different price tags).

E **Correct.** According to the passage, “throughput” refers to the flow of materials through a plant. This flow can vary as a result of various factors, but fixed and sunk costs—financial resources already committed—remain the same regardless of such variation.

**The correct answer is E.**

39. In the context of the passage as a whole, the second paragraph serves primarily to

- (A) provide an example to support the argument presented in the first paragraph
- (B) evaluate various strategies discussed in the first paragraph

(C) introduce evidence that undermines the argument presented in the first paragraph

(D) anticipate possible objections to the argument presented in the first paragraph

(E) demonstrate the potential dangers of a commonly used strategy

### Evaluation

This question asks about the rhetorical function of the second paragraph. While the first paragraph argues that a crucial factor in achieving economies of scale is intangible capital, or organized human capabilities, the second paragraph uses the example of new capital-intensive manufacturing industries to help show that this is indeed the case.

A **Correct.** The second paragraph provides an example that illustrates the claims made in the first paragraph. It discusses the way in which intangible capital—e.g., distribution networks, marketing systems, smooth production processes, and qualified management teams—enables manufacturers in new capital-intensive manufacturing industries to realize economies of scale and achieve market dominance.

B The second paragraph does, in a sense, “evaluate” investment in intangible capital: it suggests that such investment is necessary. However, investment in intangible capital is the only strategy it discusses.

C The second paragraph supports rather than undermines the first paragraph’s argument.

D Nothing in the second paragraph suggests that there are, or could be, any objections to the first paragraph’s argument.

E The second paragraph discusses the potential positive outcomes of investing in intangible capital. It suggests that there might be negative consequences to not making such investments, but it does not indicate that avoiding such investments is a commonly used strategy.

**The correct answer is A.**

40. The passage LEAST supports the inference that a manufacturer's throughput could be adversely affected by
- (A) a mistake in judgment regarding the selection of a wholesaler
  - (B) a breakdown in the factory's machinery
  - (C) a labor dispute on the factory floor
  - (D) an increase in the cost per unit of output
  - (E) a drop in the efficiency of the sales network

#### Application

This question may be best approached by using an elimination strategy—first finding the four choices that can reasonably be inferred from the passage, and then checking to make sure that the remaining choice cannot reasonably be inferred. This requires understanding the information the passage gives about throughput, then making inferences about what can cause throughput to drop. The passage defines throughput generally as *the flow of materials through a plant* and goes on to explain that it involves coordination of the production process itself, as well as obtaining materials from suppliers and marketing and distributing the manufactured products. Anything that damages this flow of materials and products would be said to have an adverse effect on throughput.

- A Making a poor judgment about a wholesaler would most likely have an adverse effect on throughput, in that it could affect *the flow of output to wholesalers and final consumers*.
- B A breakdown in machinery would likely fall into the category of *problems on the factory floor* mentioned in the passage and would likely prove damaging to throughput because of its effect on the production process itself.

C A labor dispute would also likely fall into the category of *problems on the factory floor* mentioned in the passage and would probably cause a decline in production and thus adversely affect throughput.

D **Correct.** The passage emphasizes that changes in throughput can cause increases or decreases in costs per unit. But the passage is not committed to any claims about how changes in costs per unit might affect throughput.

E The passage suggests that inefficient sales networks could cause a decline in production. Thus a decrease in sales efficiency would most likely adversely affect a manufacturer's ability to provide goods to consumers, and thus would create problems with throughput.

The correct answer is D.

41. The primary purpose of the passage is to
- (A) point out the importance of intangible capital for realizing economies of scale in manufacturing
  - (B) show that manufacturers frequently gain a competitive advantage from investment in large manufacturing facilities
  - (C) argue that large manufacturing facilities often fail because of inadequate investment in both tangible and intangible capital
  - (D) suggest that most new industries are likely to be dominated by firms that build large manufacturing plants early
  - (E) explain why large manufacturing plants usually do not help manufacturers achieve economies of scale

**Main idea**

This question depends on understanding the passage as a whole. In general, it makes an argument for investing in intangible capital as a way for manufacturers to realize economies of scale, and it supports its argument with an example.

- A Correct.** The passage focuses on intangible capital as a crucial factor in realizing economies of scale.
- B** According to the passage, manufacturers gain competitive advantage by building plants of optimal size that they then fully exploit; nothing in the passage suggests that large plants are frequently optimal.
- C** The passage assumes that manufacturers invest appropriately in tangible capital and argues that it is important for them to invest in intangible capital as well.
- D** The passage states that new capital-intensive manufacturing industries are dominated not by firms that are the first to build large plants, but by firms that exploit the full potential of their plants.
- E** The passage indicates that economies of scale can be achieved in plants of optimal size. The passage does not suggest that large plants cannot be optimal.

**The correct answer is A.**

Questions 42–44 refer to the passage on page 384.

42. The passage suggests that combing and carding differ from weaving in that combing and carding were
- (A) low-skill jobs performed primarily by women employees
  - (B) low-skill jobs that were not performed in the home
  - (C) low-skill jobs performed by both male and female employees
  - (D) high-skill jobs performed outside the home
  - (E) high-skill jobs performed by both male and female employees

**Inference**

Since the question uses the word *suggests*, the answer is probably not directly stated in the passage and therefore has to be inferred. How was weaving different from carding and combing? Lines 16–17 discuss weaving, combing, and carding; all three activities are characterized as low-skill jobs. As the human capital theory notes, there was a concentration of women in certain low-skill occupations because they *could be carried out in the home* (lines 19–20); weaving was one such occupation. Since the passage implies that relatively few women worked in carding and combing, these jobs presumably could *not* be carried out in the home. Thus the passage suggests that carding and combing were low-skill jobs, mostly done by men working outside the home.

- A** Lines 15–17 imply that women predominated in weaving but that carding and combing were done mainly by men.
- B Correct.** Carding and combing, unlike weaving, could not be done at home.
- C** The passage suggests that weaving, carding, and combing were all low-skill jobs done by both men and women, although the concentrations of the genders in these jobs were different; this statement does not explain how the passage suggests that *combing and carding differ from weaving*.
- D** Lines 16–17 characterize all three jobs as low-skill.
- E** Lines 16–17 characterize all three jobs as low-skill.

**The correct answer is B.**

43. Which of the following, if true, would most weaken the explanation provided by the human capital theory for women's concentration in certain occupations in seventeenth-century Florence?
- (A) Women were unlikely to work outside the home even in occupations whose hours were flexible enough to allow women to accommodate domestic tasks as well as paid labor.
  - (B) Parents were less likely to teach occupational skills to their daughters than they were to their sons.
  - (C) Women's participation in the Florentine paid labor force grew steadily throughout the sixteenth and seventeenth centuries.
  - (D) The vast majority of female weavers in the Florentine wool industry had children.
  - (E) Few women worked as weavers in the Florentine silk industry, which was devoted to making cloths that required a high degree of skill to produce.

#### Logical structure

To answer this question, examine the logic of the explanation. How does the human capital theory explain women's concentration in certain occupations? The theory says that women's roles in childbearing made it difficult for them to acquire the skills needed in high-skill jobs. Moreover, their role in child rearing made them choose occupations that could be carried out at home. Evidence against either of these points will weaken the explanation.

- A Correct.** If women of that time were generally unlikely to take any jobs outside the home, even those that allowed them to handle their domestic tasks, then these tasks are not the reason women predominated in jobs that they could do within the home, as the human capital theory posits.
- B** Different levels of teaching by parents may help perpetuate job segregation, but this is quite consistent with the socially defined role that women then had as childbearers and child rearers and the explanation provided by the human capital theory.

- C** The growth of women's participation in the paid labor force does not affect the explanation of occupational concentrations provided by the human capital theory.
- D** The explanation suggests the women chose weaving because they had children to raise at home. The fact that the majority of weavers had children actually supports, rather than weakens, the explanation.
- E** Silk weaving was a high-skill job, exactly the kind of job that women would not have in the human capital explanation. This point supports, rather than weakens, the explanation.

**The correct answer is A.**

44. The author of the passage would be most likely to describe the explanation provided by the human capital theory for the high concentration of women in certain occupations in the seventeenth-century Florentine textile industry as

- (A) well founded though incomplete
- (B) difficult to articulate
- (C) plausible but poorly substantiated
- (D) seriously flawed
- (E) contrary to recent research

#### Logical structure

This question requires an evaluation of the author's point of view. What does the author think of the human capital explanation of women's occupational concentration in the Florentine textile industry? In line 5, the author characterizes the theory as *useful*, a positive word reflecting a positive evaluation. However, the entire second paragraph is devoted to examining *differences in pay scales that cannot be explained by the human capital theory*. The author's positive view of the theory is qualified by the theory's inability to explain an important point.



- A Correct.** This statement reflects the author's generally positive evaluation, as well as concerns about insufficiencies.
- B** The author articulates the theory without difficulty and does not criticize it as difficult to articulate.
- C** To substantiate the theory means to provide evidence that verifies the theory. The author regards the theory's explanations of high concentration of women in certain occupations as sound, and so is unlikely to regard the theory as *poorly substantiated*.
- D** If the author regarded the theory as *seriously flawed*, the passage would not describe it as *useful* (see line 5).
- E** The author does not mention recent research.

**The correct answer is A.**

Questions 45–51 refer to the passage on page 386.

45. The primary purpose of the passage is to
- (A) present the results of statistical analyses and propose further studies
- (B) explain a recent development and predict its eventual consequences
- (C) identify the reasons for a trend and recommend measures to address it
- (D) outline several theories about a phenomenon and advocate one of them
- (E) describe the potential consequences of implementing a new policy and argue in favor of that policy

**Main idea**

Understanding the author's purpose comes from a careful consideration of the whole passage. The author begins by noting one explanation for the rise in temporary employment, but dismisses it, finding another explanation more likely. The author closes the passage by making specific recommendations to counter the problems caused by temporary employment.

- A** The author uses statistical analyses as the basis of an explanation, but the analyses act only as support for the larger purpose of explaining a trend; no further studies are proposed.
- B** The author explores possible reasons for a recent development but recommends ways to curb or change that development; the author does not predict the consequences if the situation is left unchanged or the recommendations unmet.
- C Correct.** The author examines possible reasons for the rise in temporary employment and makes specific recommendations to change the current situation.
- D** The use of the phrase *several theories* is enough to make this inaccurate. Two types of explanation are suggested: employee preference or employer self-interest.
- E** The author makes recommendations but provides no arguments in support of those recommendations—merely suggesting that they are aimed at discouraging employers from creating too many temporary positions.

**The correct answer is C.**

46. According to the passage, which of the following is true of the “factors affecting employers” that are mentioned in lines 10–19?
- (A) Most experts cite them as having initiated the growth in temporary employment that occurred during the 1980s.
- (B) They may account for the increase in the total number of temporary workers during the 1980s.
- (C) They were less important than demographic change in accounting for the increase of temporary employment during the 1980s.
- (D) They included a sharp increase in the cost of labor during the 1980s.
- (E) They are more difficult to account for than are other factors involved in the growth of temporary employment during the 1980s.



## Supporting idea

This question is based on information explicitly stated in lines 10–12. The statistical analyses *suggest that factors affecting employers account for the rise in temporary employment.*

- A *Some observers* attribute the rise to the composition of the workforce; the passage does not identify what most experts believe.
- B **Correct.** The factors affecting employers may explain the rise in temporary employment.
- C The passage suggests that these factors were more important than demographic changes in explaining the rise.
- D Although there is some suggestion in lines 15–16 that employers at some point experienced difficulty from the cost of labor, the passage does not suggest that a sharp increase in that cost occurred in the 1980s—and even suggests that labor costs may have decreased because of labor's reduced bargaining strength.
- E The issue of how to *account for* those factors (i.e., explain why they occurred) is not raised in the passage—so the issue of whether those factors are more difficult to account for than other factors is not raised.

**The correct answer is B.**

47. The passage suggests which of the following about the use of temporary employment by firms during the 1980s?
- (A) It enabled firms to deal with fluctuating product demand far more efficiently than they did before the 1980s.
  - (B) It increased as a result of increased participation in the workforce by certain demographic groups.
  - (C) It was discouraged by government-mandated policies.
  - (D) It was a response to preferences indicated by certain employees for more flexible working arrangements.
  - (E) It increased partly as a result of workers' reduced ability to control the terms of their employment.

## Inference

Since the word *suggests* is used in the question, the answer is probably not directly stated in the passage and therefore has to be inferred. The author believes that the rise in temporary employment during the 1980s can be explained by two factors affecting employers: *product demand* and *labor's reduced bargaining strength*. Temporary employment allows employers to adapt their workforce to the fluctuating demand for their product. At this time, *labor's reduced bargaining strength* left employers, not workers, in greater control of the terms of employment.

- A This goes too far beyond the information provided in the passage. The passage neither says nor implies anything about efficiency levels before the 1980s.
- B The author says that *demographic changes in the workforce did not correlate with variations in the total number of temporary workers*, ruling out this explanation.
- C In 1992, the author recommended government-mandated policies because they did not exist.
- D The author says that *growth in temporary employment now far exceeds the level explainable by ... groups said to prefer temporary jobs*.
- E **Correct.** *Labor's reduced bargaining power* resulted in employers' increased control over the terms of employment.

**The correct answer is E.**

48. The passage suggests which of the following about the workers who took temporary jobs during the 1980s?
- (A) Their jobs frequently led to permanent positions within firms.
  - (B) They constituted a less demographically diverse group than has been suggested.
  - (C) They were occasionally involved in actions organized by labor unions.
  - (D) Their pay declined during the decade in comparison with the pay of permanent employees.
  - (E) They did not necessarily prefer temporary employment to permanent employment.

## Inference

The question's use of the word *suggests* indicates that the answer is probably not directly stated in the passage. The author says that the rise in temporary employment *now far exceeds the level explainable by recent workforce entry rates of groups said to prefer temporary jobs*. Thus, the number of workers employed on a temporary basis is far greater than the number of workers who actually do prefer temporary employment.

- A No evidence is presented that temporary jobs led to permanent positions.
- B The passage grants that there was *increased participation in the workforce by certain groups, such as first-time or reentering workers*. This suggests more rather than less demographic diversity.
- C The role of temporary workers in labor unions is not discussed.
- D The passage does suggest that the pay of temporary workers is less than that of permanent workers, but not that the pay of temporary workers *declined*.
- E **Correct.** The passage indicates that the number of workers in temporary jobs was higher than the number of workers who stated a preference for temporary work.

**The correct answer is E.**

49. The first sentence in the passage suggests that the "observers" mentioned in line 1 would be most likely to predict which of the following?
- (A) That the number of new temporary positions would decline as fewer workers who preferred temporary employment entered the workforce
  - (B) That the total number of temporary positions would increase as fewer workers were able to find permanent positions
  - (C) That employers would have less control over the terms of workers' employment as workers increased their bargaining strength
  - (D) That more workers would be hired for temporary positions as product demand increased
  - (E) That the number of workers taking temporary positions would increase as more workers in any given demographic group entered the workforce

## Application

These observers specifically attribute the growth of temporary employment to *increased participation in the workforce by certain groups ... who supposedly prefer such arrangements*. On the basis of the passage's first sentence, any prediction these observers might make must be about the relation between the number of workers in temporary employment and the preference of these workers for temporary employment. No other issue is discussed. A rise in temporary employment could be explained only by a rise in the number of new workers who prefer temporary jobs, and a decline in temporary employment only by a decline in the number of new workers who prefer temporary work.

- A **Correct.** By this rationale, the only reason for a decline in temporary employment would be a corresponding decline in the number of new workers who preferred temporary jobs.
- B According to the observers, temporary employment would increase only if a greater number of employers who preferred temporary jobs entered the workforce.
- C These observers are not said to consider control over the terms of employment.
- D These observers are not said to consider the relationship between product demand and temporary employment.
- E The number of workers taking temporary positions would rise only if they were composed of *certain groups, such as first-time or reentering workers*, who, the observers believe, prefer temporary work.

**The correct answer is A.**

50. In the context of the passage, the word “excessive” (line 23) most closely corresponds to which of the following phrases?
- (A) Far more than can be justified by worker preferences
  - (B) Far more than can be explained by fluctuations in product demand
  - (C) Far more than can be beneficial to the success of the firms themselves
  - (D) Far more than can be accounted for by an expanding national economy
  - (E) Far more than can be attributed to increases in the total number of people in the workforce

#### Logical structure

In its context in this passage, the word *excessive* indicates a value-judgment by the author. The author recommends that firms be *discouraged from creating excessive numbers of temporary positions* on the basis of the statistical analyses, which show that the rise in temporary employment *now far exceeds the level explainable by recent workforce entry rates of groups said to prefer temporary jobs*. In the context of lines 24–31, it is clear that the author believes that the large expansion in temporary employment exclusively serves employer interests at the expense of employee interests (including their preferences), and is, for that reason, excessive.

- A Correct.** An expansion of temporary employment that serves employer interests more than it serves employee interests (such as preferences) is considered by the author to be *excessive*.
- B** It is not because the expansion in temporary employment allows employers to respond to fluctuations in product demand that the author regards the expansion as *excessive*.
- C** The relation of temporary employment to the success of firms is not discussed.
- D** The relation of temporary employment to an expanding economy is not discussed.
- E** The author does not consider the issue of overall increases in the workforce as a whole, only the issue of increases in temporary employment.

The correct answer is A.

51. The passage mentions each of the following as an appropriate kind of governmental action EXCEPT
- (A) getting firms to offer temporary employment primarily to a certain group of people
  - (B) encouraging equitable pay for temporary and permanent employees
  - (C) facilitating the organization of temporary workers by labor unions
  - (D) establishing guidelines on the proportion of temporary workers that firms should employ
  - (E) ensuring that temporary workers obtain benefits from their employers

#### Supporting ideas

The author closes the passage with a list of specific recommendations. Check that list against the possible answers. By the process of elimination, choose the one recommendation the author does not make. The author recommends that government policymakers consider: 1) *mandating benefit coverage for temporary employees*, 2) *promoting pay equity between temporary and permanent workers*, 3) *assisting labor unions in organizing temporary workers*, and 4) *encouraging firms to assign temporary jobs primarily to employees who explicitly indicate that preference*.

- A** The author does recommend that firms assign temporary jobs to workers who prefer temporary work.
- B** The author does recommend that pay equity between temporary and permanent workers be encouraged.
- C** The author does recommend that labor unions be assisted in organizing temporary workers.
- D Correct.** The author does not recommend that such guidelines be established.
- E** The author does recommend that benefit coverage for temporary workers be mandated.

The correct answer is D.

Questions 52–55 refer to the passage on page 388.

52. It can be inferred from the passage that a large plant might have to spend more than a similar but smaller plant on environmental compliance because the larger plant is
- (A) more likely to attract attention from local regulators
  - (B) less likely to be exempt from permit and reporting requirements
  - (C) less likely to have regulatory costs passed on to it by companies that supply its raw materials
  - (D) more likely to employ older production technologies
  - (E) more likely to generate wastes that are more environmentally damaging than those generated by smaller plants

**Inference**

This item depends on understanding the implications of the passage's discussion of differences between large and small plants. It asks what might be true of a larger plant that would compel it to spend more than a smaller plant on environmental compliance. The passage addresses this issue by stating that smaller plants are often not subject to the same permit or reporting requirements that larger plants are.

- A The likelihood of attracting regulatory attention is discussed only in the context of comparing plants that are *isolated* with small plants that are near large noncompliant ones. The passage does not suggest that size is generally the crucial determining factor in attracting regulatory attention.
- B **Correct.** According to the passage, certain permit or reporting requirements may not apply to smaller plants; this suggests that larger plants are less likely than smaller plants to be exempt from these requirements, and thus that the larger plants would have to spend more to comply.
- C The passage does not discuss the passing on of regulatory costs from suppliers to plants.

- D The passage does not suggest that larger plants are any more likely than smaller plants to employ older production technologies.
- E The passage does not distinguish between the types of wastes emitted by larger plants and those emitted by smaller plants.

**The correct answer is B.**

53. According to the passage, which of the following statements about sulfur dioxide and nitrogen oxide outputs is true?
- (A) Older production technologies cannot be adapted so as to reduce production of these outputs as waste products.
  - (B) Under the most recent environmental regulations, industrial plants are no longer permitted to produce these outputs.
  - (C) Although these outputs are environmentally hazardous, some plants still generate them as waste products despite the high compliance costs they impose.
  - (D) Many older plants have developed innovative technological processes that reduce the amounts of these outputs generated as waste products.
  - (E) Since the production processes that generate these outputs are less costly than alternative processes, these less expensive processes are sometimes adopted despite their acknowledged environmental hazards.

**Supporting idea**

This item depends on identifying what the passage states explicitly about outputs of sulfur dioxide and nitrogen oxide. The passage says that plants that produce these outputs are those that use older industrial coal-fired burners, and that such plants are subject to extensive compliance costs imposed by new regulations.



- A The passage does not address the question of whether older production technologies might be adapted to reduce outputs of sulfur dioxide and nitrogen oxide.
- B The passage states that new regulations have imposed high compliance costs on companies that produce sulfur dioxide and nitrogen oxide outputs, not that these outputs are prohibited.
- C **Correct.** The passage states that some companies are still using the older kinds of burners that generate sulfur dioxide and nitrogen oxide outputs, and that new regulations have imposed high compliance costs on these companies.
- D The passage does not address the question of whether older plants have developed new processes to reduce the amounts of sulfur dioxide and nitrogen oxide they produce.
- E Sulfur dioxide and nitrogen oxide outputs, the passage suggests, are produced only by older industrial coal-fired burners; newer facilities (using alternative processes) do not employ this technology, the expense of which is not mentioned in the passage.

The correct answer is C.

54. Which of the following best describes the relationship of the statement about large plants (lines 12–17) to the passage as a whole?
- (A) It presents a hypothesis that is disproved later in the passage.
  - (B) It highlights an opposition between two ideas mentioned in the passage.
  - (C) It provides examples to support a claim made earlier in the passage.
  - (D) It exemplifies a misconception mentioned earlier in the passage.
  - (E) It draws an analogy between two situations described in the passage.

### Evaluation

This question asks about the role played in the passage by the following statement: *Additionally, large plants can spread compliance costs such as waste treatment across a larger revenue base; on the other hand, some smaller plants may not even be subject to certain provisions such as permit or reporting requirements by virtue of their size.* This statement describes situations in which compliance costs for plants of different sizes may differ, which serve as evidence in support of the passage's main claim: that environmental regulations do *not* affect all competitors in a given industry uniformly.

- A The statement in question is not a hypothesis; rather, it reports factors that are known to affect the varying impact of environmental regulations.
- B This is too vague to be a good description of the kind of relationship the question asks about. The highlighted statement does present a contrast—it suggests that larger plants' compliance costs are lower under some circumstances, while smaller plants' compliance costs are lower under other circumstances. But this purports to state two facts rather than mere *ideas*; they are contrasting facts but not in any meaningful sense *opposed*, since they can easily coexist.
- C **Correct.** The statement provides examples to support the initial claim made in the passage that regulatory costs fall unevenly on competitors in an industry: large plants can spread compliance costs around, and smaller plants may not even have to pay certain costs.
- D This statement helps to dispel, not exemplify, a misconception mentioned earlier in the passage—i.e., the myth that environmental regulations affect all companies in an industry the same way.
- E The statement does not suggest that the situation of larger and smaller plants is similar (or analogous) to any other situation mentioned in the passage.

The correct answer is C.



55. The primary purpose of the passage is to
- (A) address a widespread environmental management problem and suggest possible solutions
  - (B) illustrate varying levels of compliance with environmental regulation among different corporations
  - (C) describe the various alternatives to traditional methods of environmental management
  - (D) advocate increased corporate compliance with environmental regulation
  - (E) correct a common misconception about the impact of environmental regulations

#### Main idea

This question depends on understanding the passage as a whole. Its first sentence indicates its main purpose: to dispel a myth about environmental regulations that is often taken as fact.

- A The passage is not about the management of any environmental problem, which would be a problem about how to prevent or undo damage to the environment. The passage primarily aims to dispel a belief that the passage says is widely held by environmental managers.
- B The passage refers to variations in firms' levels of compliance with environmental regulations, but its primary purpose is not to illustrate those varying levels, nor does it do so.
- C The passage suggests that most environmental managers are mistaken about a key concept; its primary purpose is not to describe traditional methods of environmental management or alternatives to those traditional methods, nor does it do so.
- D The passage takes no position on whether companies should increase their compliance with environmental regulation.
- E **Correct.** The passage primarily aims to dispel the belief that environmental regulations affect all companies in an industry uniformly.

The correct answer is E.

Questions 56–62 refer to the passage on page 390.

56. According to the passage, which of the following was true of the treaty establishing the Fort Belknap Indian Reservation?
- (A) It was challenged in the Supreme Court a number of times.
  - (B) It was rescinded by the federal government, an action that gave rise to the *Winters* case.
  - (C) It cited American Indians' traditional use of the land's resources.
  - (D) It failed to mention water rights to be enjoyed by the reservation's inhabitants.
  - (E) It was modified by the Supreme Court in *Arizona v. California*.

#### Supporting ideas

This question requires recognizing information that is explicitly stated in the passage. In the first sentence, the passage states that the Fort Belknap Indian Reservation was established by treaty. The following sentence begins by stating that this treaty *did not mention water rights* (lines 5–6); in other words, the right to use the water flowing through the reservation was not established by treaty.

- A Although the Supreme Court ruled on water rights for the reservation established by the treaty, there is no evidence in the passage that the treaty itself was ever challenged in the Supreme Court.
- B Although the *Winters* case resulted in water rights for the reservation established by the treaty, there is no evidence in the passage that the treaty was ever rescinded.
- C The passage does not mention American Indians' traditional resource use as being tied to the treaty establishing the Fort Belknap Indian Reservation.
- D **Correct.** The passage states explicitly that the treaty establishing the Fort Belknap Indian Reservation did not mention the right to use water flowing through the reservation.
- E The passage does not mention the Fort Belknap Indian Reservation or the treaty that established it in relation to *Arizona v. California*.

The correct answer is D.

57. The passage suggests that, if the criteria discussed in lines 10–20 were the only criteria for establishing a reservation's water rights, which of the following would be true?

- (A) The water rights of the inhabitants of the Fort Belknap Indian Reservation would not take precedence over those of other citizens.
- (B) Reservations established before 1848 would be judged to have no water rights.
- (C) There would be no legal basis for the water rights of the Rio Grande pueblos.
- (D) Reservations other than American Indian reservations could not be created with reserved water rights.
- (E) Treaties establishing reservations would have to mention water rights explicitly in order to reserve water for a particular purpose.

#### Inference

Answering this question requires making an inference based on information given in the passage. The question focuses on lines 10–20, where the passage provides a summary of the criteria used by the U.S. courts to establish water rights. The passage then explains that the Rio Grande pueblos used other means to establish water rights, noting that what *constitutes an American Indian reservation is a question of practice, not of legal definition* (lines 34–36). This strongly implies that establishing water rights for the Rio Grande pueblos required reference to legal language not contained in the criteria described in lines 10–20.

- A Since the passage says that decisions setting the criteria in lines 10–20 cited the *Winters* case—which gave water rights to the Fort Belknap Indian Reservation—one can infer that the Fort Belknap reservation met all of those criteria.
- B The criteria in lines 10–20 do not touch on specific dates of the transfer of sovereignty over particular lands.
- C **Correct.** The passage demonstrates that for the Rio Grande pueblos, it was necessary to establish water rights based on criteria not contained in lines 10–20.

D The criteria described in lines 10–20 are not specific only to lands reserved for American Indians.

E The passage illustrates that *Winters* established water rights in the absence of any explicit mention of water rights in the treaty.

**The correct answer is C.**

58. Which of the following most accurately summarizes the relationship between *Arizona v. California* in lines 38–42, and the criteria citing the *Winters* doctrine in lines 10–20?

- (A) *Arizona v. California* abolishes these criteria and establishes a competing set of criteria for applying the *Winters* doctrine.
- (B) *Arizona v. California* establishes that the *Winters* doctrine applies to a broader range of situations than those defined by these criteria.
- (C) *Arizona v. California* represents the sole example of an exception to the criteria as they were set forth in the *Winters* doctrine.
- (D) *Arizona v. California* does not refer to the *Winters* doctrine to justify water rights, whereas these criteria do rely on the *Winters* doctrine.
- (E) *Arizona v. California* applies the criteria derived from the *Winters* doctrine only to federal lands other than American Indian reservations.

#### Inference

This question requires inferring how one part of the passage bears on another part of the passage. The two parts referred to are the criteria described in lines 10–20 and *Arizona v. California*, which is referred to in lines 38–45. *Arizona v. California* shows that the establishment of water rights need not be tied to any previous legal definition of reservation lands but may be tied to the U.S. government's practice merely of treating the land as reserved for American Indians. The criteria described in lines 10–20 apply to situations in which the land in question has been legally identified as reservation land. So *Arizona v. California* broadened the scope of *Winters* in establishing water rights.

- A The passage illustrates that *Arizona v. California* does not supersede or deny any of the criteria in lines 10–20.
- B **Correct.** The passage suggests that *practice* and not *legal definition* (lines 34–36) allows *Winters* to be applied to situations not covered by the criteria in lines 10–20.
- C In stating that *some American Indian tribes have also established water rights* by means other than the criteria in lines 10–20, the first sentence of the second paragraph makes clear that *Arizona v. California* is not the sole exception to the criteria.
- D The passage states that *Arizona v. California* does refer to *Winters*.
- E The passage illustrates that *Arizona v. California* was directly relevant to the Pueblo Indians' water rights.

**The correct answer is B.**

59. The "pragmatic approach" mentioned in lines 37–38 of the passage is best defined as one that
- (A) grants recognition to reservations that were never formally established but that have traditionally been treated as such
  - (B) determines the water rights of all citizens in a particular region by examining the actual history of water usage in that region
  - (C) gives federal courts the right to reserve water along with land even when it is clear that the government originally intended to reserve only the land
  - (D) bases the decision to recognize the legal rights of a group on the practical effect such a recognition is likely to have on other citizens
  - (E) dictates that courts ignore precedents set by such cases as *Winters v. United States* in deciding what water rights belong to reserved land

### Supporting ideas

This question requires recognizing what a particular phrase in the passage is referring to. The pragmatic approach the question refers to is introduced by the passage as *this* pragmatic approach. It is therefore necessary to identify which approach the passage has already referred to in this context, which in this case is contained in the sentence just prior to the reference. This sentence states that establishing what is an American Indian reservation is a matter of the U.S. government's practice and not of any formal, legal definition.

- A **Correct.** The approach referred to as *pragmatic* involves establishing American Indian reservations based not on formal law but on the government's established practice of treating the lands as such.
- B The approach referred to as *pragmatic* is not specific to establishing water rights.
- C The approach referred to as *pragmatic* is not specific to establishing water rights.
- D The approach referred to as *pragmatic* does not refer to balancing the rights of some people with rights of others.
- E The approach referred to as *pragmatic* is shown to be consistent with and supportive of the rights established by *Winters*.

**The correct answer is A.**

60. The author cites the fact that the Rio Grande pueblos were never formally withdrawn from public lands primarily in order to do which of the following?
- (A) Suggest why it might have been argued that the *Winters* doctrine ought not to apply to pueblo lands
  - (B) Imply that the United States never really acquired sovereignty over pueblo lands
  - (C) Argue that the pueblo lands ought still to be considered part of federal public lands
  - (D) Support the argument that the water rights of citizens other than American Indians are limited by the *Winters* doctrine
  - (E) Suggest that federal courts cannot claim jurisdiction over cases disputing the traditional diversion and use of water by Pueblo Indians

### Evaluation

Answering this question involves recognizing how a particular part of the passage functions within the passage as a whole. The passage illustrates in the first paragraph that *Winters* was cited in the establishment of water rights based on a set of criteria that included the formal withdrawal of lands by the government. In the second paragraph, the case of the Rio Grande pueblos is introduced as an example of lands that had never been formally withdrawn by the government, raising the question of whether *Winters* would still be applicable in such situations. The passage then asserts that the situation of the pueblos *has not barred* (line 33) the application of *Winters*.

- A **Correct.** While the passage affirms the application of *Winters* to the situation with the pueblos, it recognizes that it may initially appear that *Winters* does not apply.
- B The passage states explicitly that the United States did gain official sovereignty over pueblo lands in 1848, when they *became part of the United States* (lines 27–28).
- C The passage states explicitly that *the pueblo lands never formally constituted a part of federal public lands* (lines 28–29) and takes no stand on the issue of whether particular lands ought to be considered public lands.
- D While one can infer that the rights of other citizens to use water could be limited by reserving water rights for residents of American Indian lands according to the *Winters* doctrine, the passage takes no stand on this issue.
- E The passage does not mention the rights of federal courts to claim jurisdiction over particular water rights cases.

The correct answer is A.

- 61. The primary purpose of the passage is to
  - (A) trace the development of laws establishing American Indian reservations
  - (B) explain the legal basis for the water rights of American Indian tribes
  - (C) question the legal criteria often used to determine the water rights of American Indian tribes
  - (D) discuss evidence establishing the earliest date at which the federal government recognized the water rights of American Indians
  - (E) point out a legal distinction between different types of American Indian reservations

### Main idea

This question requires recognizing the main topic of the passage, which is about the establishment of water rights on American Indian lands. Its intent is to explain or describe, and it does not take sides on any issue.

- A The passage is primarily about establishing water rights, not establishing reservations.
- B **Correct.** The passage is an explanation of water rights on American Indian lands.
- C The passage describes legal criteria used to establish water rights on American Indian lands but does not take issue with them.
- D The passage does not discuss the earliest date for water rights on American Indian lands.
- E The passage is primarily about establishing water rights, not about types of reservations.

The correct answer is B.

- 62. The passage suggests that the legal rights of citizens other than American Indians to the use of water flowing into the Rio Grande pueblos are
  - (A) guaranteed by the precedent set in *Arizona v. California*
  - (B) abolished by the *Winters* doctrine
  - (C) deferred to the Pueblo Indians whenever treaties explicitly require this
  - (D) guaranteed by federal land-use laws
  - (E) limited by the prior claims of the Pueblo Indians



**Inference**

Answering this question requires recognizing what the passage implies. The passage illustrates at the beginning of the second paragraph that water rights were granted to Pueblo Indians based on their use of the water in the Rio Grande pueblos prior to U.S. sovereignty. The passage also later states that since the *Winters* doctrine applies, the water rights of Pueblo Indians *have priority over other citizens' water rights as of 1848* (lines 42–44), which implies that the water rights of citizens other than Pueblo Indians are limited.

- A The passage illustrates that *Arizona v. California* reinforced the water rights of citizens residing on American Indian reservations; it does not imply a precedent ensuring water rights for other citizens.
- B The passage states that the water rights of citizens other than Pueblo Indians are lower in priority, not abolished altogether.
- C The passage does not mention that different water rights have been defined by different treaties.
- D The passage does not mention that the water rights of citizens other than Pueblo Indians are guaranteed on pueblo lands.
- E **Correct.** The passage states that the water rights of Pueblo Indians have priority over other citizens' water rights, which thereby limits the rights of those citizens.

The correct answer is E.

Questions 63–68 refer to the passage on page 392.

63. In the passage, the author is primarily interested in
- (A) suggesting an alternative to an outdated research method
  - (B) introducing a new research method that calls an accepted theory into question
  - (C) emphasizing the instability of data gathered from the application of a new scientific method
  - (D) presenting a theory and describing a new method to test that theory
  - (E) initiating a debate about a widely accepted theory

**Main idea**

This question concerns the main point of the passage. A careful examination of the overall structure of the passage will reveal the main point. In the first paragraph, the author briefly presents Milankovitch's theory and explains why it could not be tested early on. In the second and third paragraphs, the author describes how a new method allows testing of the theory and shows how evidence from the testing supports the theory. While the final paragraph acknowledges that other factors should be considered, the author's primary interest in this passage is in presenting Milankovitch's theory and the recently discovered method for testing it.

- A A new research method is described, but no previous method is discussed.
- B As described in the passage, the new method tests and confirms the theory; there is no mention that the theory is accepted or that the method casts doubt on it.
- C Nothing in the passage suggests that "instability of data" is an issue.
- D **Correct.** The author presents Milankovitch's theory and describes the oxygen isotope method of testing it.
- E The theory is nowhere said to be "widely accepted" and the author does not debate the theory.

The correct answer is D.

64. The author of the passage would be most likely to agree with which of the following statements about the Milankovitch theory?
- (A) It is the only possible explanation for the ice ages.
  - (B) It is too limited to provide a plausible explanation for the ice ages, despite recent research findings.
  - (C) It cannot be tested and confirmed until further research on volcanic activity is done.
  - (D) It is one plausible explanation, though not the only one, for the ice ages.
  - (E) It is not a plausible explanation for the ice ages, although it has opened up promising possibilities for future research.



**Application**

The author's reaction to the statements about the Milankovitch theory must be based on how the author treats the theory in the passage. The first, second, and third paragraphs describe the theory and the use of a new research method to test the theory. The passage states that data from these tests *have established a strong connection between variations in the Earth's orbit and the periodicity of the ice ages*, suggesting that the author of the passage believes the theory is plausible. In the final paragraph, the author points to other factors that might be involved, suggesting that the theory might not provide a complete explanation.

- A In the last paragraph, the author suggests that because there are still other untested factors that may have effects on climate, other explanations are possible.
- B Though in the last paragraph the author points to other factors that may be involved, these are not presented by the author as indicating limitations that diminish the plausibility of the theory—they are acknowledged merely as possibilities that are not now understood—and nothing else in the passage suggests that the theory is “too limited.”
- C The author shows how the theory has been tested; volcanic activity is not part of this theory.
- D **Correct.** The author's presentation of the theory and the tests of the theory show that the author finds the theory plausible; the mention of other factors shows the author does not think that all other explanations have been ruled out, even if they are as yet untested.
- E The theory was a plausible explanation from its beginning, but it was not testable until recently; scientists would be unlikely to try to devise means to test a theory that did not strike them as antecedently plausible.

The correct answer is D.

65. It can be inferred from the passage that the isotope record taken from ocean sediments would be less useful to researchers if which of the following were true?

- (A) It indicated that lighter isotopes of oxygen predominated at certain times.
- (B) It had far more gaps in its sequence than the record taken from rocks on land.
- (C) It indicated that climate shifts did not occur every 100,000 years.
- (D) It indicated that the ratios of oxygen 16 and oxygen 18 in ocean water were not consistent with those found in fresh water.
- (E) It stretched back for only a million years.

**Inference**

To make an inference about the isotope record from ocean sediments, examine what the passage says about that record. The third paragraph discusses that record and lists its two advantages. First, it is a global record with *remarkably little variation* in samples from varied locations. Second, it is *more continuous* than the record from rocks. If either of these advantages were not true, then it is logical to infer that the record would be less useful.

- A According to lines 14–16, the lighter isotope does predominate; this is part of the record and does not affect its usefulness.
- B **Correct.** In lines 37–42, the author states that an advantage of the ocean record is that it is *a more continuous record than that taken from rocks on land*. If this were not true, the ocean record would be less useful.
- C If the record were to show that the shifts did not occur every 100,000 years, Milankovitch's theory would be weakened. This impact on the theory does not make the isotope record less useful to researchers. The record is useful precisely because it can offer evidence to confirm or refute such theories.
- D This inconsistency would not affect the usefulness of the ocean-water record. Researchers would simply need to accommodate the fresh-water inconsistency.
- E The record would still be useful. Lines 42–46 attest to the establishment of a pattern based on data from *the past several hundred thousand years*.

The correct answer is B.

66. According to the passage, which of the following is true of the ratios of oxygen isotopes in ocean sediments?
- (A) They indicate that sediments found during an ice age contain more calcium carbonate than sediments formed at other times.
  - (B) They are less reliable than the evidence from rocks on land in determining the volume of land ice.
  - (C) They can be used to deduce the relative volume of land ice that was present when the sediment was laid down.
  - (D) They are more unpredictable during an ice age than in other climatic conditions.
  - (E) They can be used to determine atmospheric conditions at various times in the past.

#### Supporting ideas

The phrase *according to the passage* suggests that the answer to the question is most likely stated in the passage. Lines 12–14 state that the relative volume of land ice can be deduced from the ratio of oxygen 18 to oxygen 16 in ocean sediments.

- A There is no evidence in the passage about this point.
- B The ocean record is described in lines 38–39 as *more continuous*, so it is unlikely to be less reliable. In any case, reliability is not discussed.
- C **Correct.** Lines 12–14 explain that *the land-ice volume for a given period can be deduced from the ratio of two oxygen isotopes*.
- D There is no evidence in the passage to support this statement.
- E The passage does not discuss the use of this record in determining past atmospheric conditions.

The correct answer is C.

67. It can be inferred from the passage that precipitation formed from evaporated ocean water has
- (A) the same isotopic ratio as ocean water
  - (B) less oxygen 18 than does ocean water
  - (C) less oxygen 18 than has the ice contained in continental ice sheets
  - (D) a different isotopic composition than has precipitation formed from water on land
  - (E) more oxygen 16 than has precipitation formed from fresh water

#### Inference

Any inference about precipitation from evaporated ocean water needs to be based on what the passage says. Lines 20–22 show that *heavier isotopes tend to be left behind when water evaporates from the ocean surfaces*. Therefore, the evaporated water would contain less oxygen 18 and the remaining ocean water would contain more. It is logical to infer that precipitation formed from this evaporated water would also contain less oxygen 18.

- A Lines 20–24 explain that the water remaining in the ocean after evaporation has more oxygen 18.
- B **Correct.** Since *the heavier isotopes tend to be left behind*, there will be less oxygen 18 in the evaporated water and in the precipitation that forms from it.
- C The passage suggests that the ocean water evaporates and through subsequent precipitation helps form the ice sheets, so the amount of oxygen 18 in the ice sheets should be similar to the amount in the precipitation formed from the evaporated water.
- D The passage does not discuss precipitation formed from water on land.
- E The passage does not discuss precipitation formed from fresh water.

The correct answer is B.

68. It can be inferred from the passage that calcium carbonate shells
- (A) are not as susceptible to deterioration as rocks
  - (B) are less common in sediments formed during an ice age
  - (C) are found only in areas that were once covered by land ice
  - (D) contain radioactive material that can be used to determine a sediment's isotopic composition
  - (E) reflect the isotopic composition of the water at the time the shells were formed

#### Inference

Any inference about calcium carbonate shells needs to be based on what the passage says about these shells. Lines 24–32 explain the role of these shells in forming sediments and establishing a chronology for ice ages. The shells *were constructed with oxygen atoms drawn from the surrounding ocean*. Lines 29–32 make it clear that if the sediments reveal a higher ratio of oxygen 18, it is because more oxygen 18 had been left behind when the ocean water evaporated and contributed to the growth of continental ice sheets. It can thus be inferred that the shells that make up those sediments must reflect the proportion of oxygen 18 found in the ocean water at the time they were formed.

- A The only mention of rocks in the passage is a comparison of “gappiness” of the rock and sedimentary specimen records in lines 38–39; this information does not allow any firm inference to be made with respect to relative susceptibility to deterioration, though a more continuous record might be the result of less susceptibility to deterioration.
- B The passage does not make any reference to the relative abundance of these shells during ice ages; no such inference can be drawn.

- C The only information in the passage that might support this statement is found in lines 29–32, but that information, about the correlation between oxygen ratios in sediment specimens and land ice, describes a relation that implies nothing about distributions of such specimens.
- D Though the passage does indirectly indicate that the shells contained radioactive material, nothing in the passage suggests that radioactive material is used to determine isotopic composition.

**E Correct.** The passage explains that oxygen atoms in the surrounding water are one of the building blocks of calcium carbonate shells. The isotopic composition of the surrounding water changes during the ice age cycles, so it is logical that the isotopic composition of the shells will change depending on when they were formed.

The correct answer is E.

Questions 69–74 refer to the passage on page 394.

69. The primary purpose of the passage is to
- (A) examine two sides of a historiographical debate
  - (B) call into question an author's approach to a historiographical debate
  - (C) examine one author's approach to a historiographical debate
  - (D) discuss two authors' works in relationship to a historiographical debate
  - (E) explain the prevalent perspective on a historiographical debate

# Main idea

This question requires understanding what the passage as a whole is attempting to do. The passage opens by introducing two books published in 1984 that both concern the history of women in the United States. The passage then makes it clear that one book deals *directly* (line 14) with the issue of women's status, while the other does not. The passage then goes on to discuss the perspective that each book takes and what each book has to offer for an assessment of women's status in the eighteenth and nineteenth centuries.

- A The two books discussed in the passage do not take different sides on a particular debate but rather are described as being more or less useful to the debate itself.
- B The passage focuses on how two different books contain information useful to a particular historiographical debate but does not call into question the approach of either book.
- C The passage focuses on two authors' works, not one.
- D **Correct.** The passage discusses what two different books have to offer in relation to a particular historiographical debate.
- E The passage does not describe any perspective on a particular historiographical debate as being more prevalent than any other.

The correct answer is D.

70. The author of the passage mentions the supervision of schools primarily in order to
- (A) remind readers of the role education played in the cultural changes of the nineteenth century in the United States
  - (B) suggest an area in which nineteenth-century American women were relatively free to exercise power
  - (C) provide an example of an occupation for which accurate data about women's participation are difficult to obtain

- (D) speculate about which occupations were considered suitable for United States women of the nineteenth century

- (E) illustrate how the answers to questions about women's status depend on particular contexts

# Evaluation

Answering this question depends on understanding what role a particular piece of information plays in the passage as a whole. The author implicitly supports Lebsock's contention (beginning at line 19) that different frames of reference can produce different perspectives on the debate about women's status in the eighteenth and nineteenth centuries. The author then summarizes different contexts cited by Lebsock to support the contention about frames of reference. As part of this summary, the author refers to *supervising schools* (line 23) as an example of a job that apparently showed women losing power.

- A The passage does not discuss the role of education in the nineteenth century.
- B The passage does mention some ways in which, according to Lebsock, *women ... gained power* (line 24) in the nineteenth century, but *supervising schools* is not among them.
- C The passage does not discuss the difficulty of obtaining data about particular occupations.
- D The passage makes no judgments about the suitability for women of any jobs in the nineteenth century.
- E **Correct.** The passage mentions supervising schools as part of an illustration of Lebsock's claim that the debate about women's status depends on the context being examined.

The correct answer is E.



71. With which of the following characterizations of Lebsock's contribution to the controversy concerning women's status in the nineteenth-century United States would the author of the passage be most likely to agree?
- (A) Lebsock has studied women from a formerly neglected region and time period.
  - (B) Lebsock has demonstrated the importance of frame of reference in answering questions about women's status.
  - (C) Lebsock has addressed the controversy by using women's current status as a frame of reference.
  - (D) Lebsock has analyzed statistics about occupations and property that were previously ignored.
  - (E) Lebsock has applied recent historiographical methods to the biography of a nineteenth-century woman.

#### Supporting ideas

Answering this question requires recognizing information explicitly given in the passage. The passage introduces the work of Lebsock in line 6 and then goes on to describe several characteristics of Lebsock's book. In lines 19–21, the author introduces Lebsock's claim that the historiographical debate about women's status is dependent on frame of reference and calls that claim important; the passage then gives an example showing how frame of reference affects views of women's status. In so doing, the author displays an implicit agreement with Lebsock's discussion on this point.

- A The author of the passage portrays neither the place nor time period that Lebsock focuses on as having been neglected by historians.
- B Correct.** The author describes as important Lebsock's idea that frame of reference informs the debate about women's status.
- C According to the passage, Lebsock's book deals with women's status in the eighteenth and nineteenth centuries, not the present status of women.
- D The passage does not mention or imply that Lebsock analyzed statistics in writing her book.

- E Although the passage does describe Lebsock's book as pertaining to an ongoing historiographical debate, it identifies the book's topic as *women in one southern community* (lines 7–8), not the life of a single woman.

#### The correct answer is B.

72. According to the passage, Lebsock's work differs from Buel and Buel's work in that Lebsock's work
- (A) uses a large number of primary sources
  - (B) ignores issues of women's legal status
  - (C) refuses to take a position on women's status in the eighteenth century
  - (D) addresses larger historiographical issues
  - (E) fails to provide sufficient material to support its claims

#### Supporting ideas

This question asks for recognition of information contained in the passage. In the first sentence, the passage states that Buel and Buel's work and Lebsock's work have *contrasting approaches*. The passage then proceeds, using descriptions of each work's approach, to illustrate how the works differ. The passage notes that Buel and Buel's work *makes little effort* to place its biographical subject *in the context of recent historiography on women* (lines 4–6), whereas Lebsock's work *attempts to redirect two decades of historiographical debate* about women's status.

- A Primary sources are not mentioned in the passage in relation to either work discussed.
- B The legal status of women is not mentioned in the passage.
- C Lebsock's work is described in the passage as attempting to redirect the debate about women's status in the eighteenth and nineteenth centuries.
- D Correct.** The passage suggests that by not placing its subject's story in the context of historiography, Buel and Buel's work does not therefore address larger historiographical issues, as Lebsock's does.
- E The passage tends to support Lebsock's views and does not refer to any lack of support for the claims made in Lebsock's work.

#### The correct answer is D.



73. The passage suggests that Lebsock believes that compared to nineteenth-century American women, eighteenth-century American women were

- (A) in many respects less powerful in relation to men
- (B) more likely to own real estate
- (C) generally more economically independent
- (D) more independent in conducting their private lives
- (E) less likely to work as school superintendents

#### Inference

This question requires making an inference based on information given in the passage. As part of the passage's description of Lebsock's contribution to the historiographical debate about women's status in the eighteenth and nineteenth centuries, Lebsock's conclusions about women's autonomy are described. As part of this description, the passage cites Lebsock's conclusion that nineteenth-century women lost economic autonomy when compared to eighteenth-century women (lines 16–19).

- A The passage states that in many ways women in the nineteenth century *lost power in relation to men* (lines 21–22), which would imply that in those respects eighteenth-century women had more power in relation to men, not less. The only increase mentioned in nineteenth-century women's power is associated with owning more real estate.
- B The passage states that more nineteenth-century women owned real estate.
- C **Correct.** As the passage states, Lebsock concluded that nineteenth-century women lost economic autonomy compared to eighteenth-century women.
- D The passage states that nineteenth-century women gained more independence in their private lives.
- E The passage cites school superintendents as an example of an occupation more likely to be held by eighteenth-century women.

The correct answer is C.

74. The passage suggests that Buel and Buel's biography of Mary Fish provides evidence for which of the following views of women's history?

- (A) Women have lost power in relation to men since the colonial era.
- (B) Women of the colonial era were not as likely to be concerned with their status as were women in the nineteenth century.
- (C) The colonial era was not as favorable for women as some historians have believed.
- (D) Women had more economic autonomy in the colonial era than in the nineteenth century.
- (E) Women's occupations were generally more respected in the colonial era than in the nineteenth century.

#### Inference

This question requires understanding what the passage implies. The approach that Buel and Buel's work takes is specifically described in lines 3–6 and again in lines 27–32. In lines 27–30, the passage states that Buel and Buel's work *provides ample raw material for questioning the myth ... of a colonial golden age in the eighteenth century*, referring to a myth about women's status. In describing this golden age as a myth fostered by some historians, the passage suggests that this era was not as favorable to women as these historians suggest.

- A The passage describes Lebsock's work as providing such evidence, not Buel and Buel's work.
- B The passage does not pertain to the level of concern women had for their status.
- C **Correct.** The final paragraph of the passage describes Buel and Buel's work as providing material that calls into question claims that the eighteenth century was especially favorable to women.
- D The passage refers to the economic autonomy of women in relation to Lebsock's work, not Buel and Buel's work.
- E The passage does not refer to whether any particular occupations held by women were more respected at one time or another.

The correct answer is C.

Questions 75–83 refer to the passage on page 396.

75. Which of the following titles best summarizes the contents of the passage?
- (A) Neurotransmitters: Their Crucial Function in Cellular Communication
  - (B) Diet and Survival: An Old Relationship Reexamined
  - (C) The Blood Supply and the Brain: A Reciprocal Dependence
  - (D) Amino Acids and Neurotransmitters: The Connection between Serotonin Levels and Tyrosine
  - (E) The Effects of Food Intake on the Production and Release of Serotonin: Some Recent Findings

**Main idea**

Finding a title that best summarizes a passage requires examining the passage as a whole. This task is made easier by the fact that the second sentence of the first paragraph provides a topic sentence stating the main idea: *In recent studies, however, we have discovered that the production and release in brain neurons of the neurotransmitter serotonin ... depend directly on the food that the body processes.* In the second paragraph, the authors cite the results of several studies relating neurotransmitter levels to eating meals and to injections of insulin. In the final paragraph, the authors discuss a study of the effect of a protein-rich meal on serotonin level. Thus, the correct title must show the relationship between food eaten and serotonin produced.

- A The function of neurotransmitters is only briefly mentioned.
- B The passage does not discuss the relation between diet and survival.
- C There is no discussion of blood supply and the brain.
- D While tyrosine is briefly mentioned, this was not a main focus of the studies.
- E **Correct.** This title offers a summary of the article's contents.

**The correct answer is E.**

76. According to the passage, the speed with which tryptophan is provided to the brain cells of a rat varies with the
- (A) amount of protein present in a meal
  - (B) concentration of serotonin in the brain before a meal
  - (C) concentration of leucine in the blood rather than with the concentration of tyrosine in the blood after a meal
  - (D) concentration of tryptophan in the brain before a meal
  - (E) number of serotonin-containing neurons

**Supporting ideas**

The phrase *according to the passage* suggests that the answer is likely stated in the passage. Look at the third paragraph, which discusses variations in the speed with which tryptophan is provided to the brain. Lines 41–44 state *the more protein is in a meal ... the more slowly is tryptophan provided to the brain.*

- A **Correct.** The greater the amount of protein, the more slowly tryptophan is provided.
- B The relationship is not discussed in the passage, although the concentration of serotonin *after* a meal is measured.
- C While leucine and tyrosine are mentioned, their concentrations in the blood are not compared.
- D This relationship is not discussed in the passage, although the concentration of tryptophan *after* a meal is measured.
- E The researchers do not consider the number of neurons.

**The correct answer is A.**

77. According to the passage, when the authors began their first studies, they were aware that
- (A) they would eventually need to design experiments that involved feeding rats high concentrations of protein
  - (B) tryptophan levels in the blood were difficult to monitor with accuracy
  - (C) serotonin levels increased after rats were fed meals rich in tryptophan
  - (D) there were many neurotransmitters whose production was dependent on metabolic processes elsewhere in the body
  - (E) serotonin levels increased after rats were injected with a large amount of tryptophan

#### Supporting ideas

The phrase *according to the passage* suggests that the answer is likely stated in the passage. Look at the first sentence of the second paragraph where the focus of the authors' *first studies* is explained. The investigators wanted to see if an increase in serotonin levels would be observed after rats ate meals that changed tryptophan levels in the blood. Earlier research had already established that injecting tryptophan increased serotonin levels.

- A The authors' decision to add protein came later in their studies, after they had seen the effects of eating in general.
- B The passage does not identify any problems with monitoring tryptophan levels in the blood.
- C This was the hypothesis of the first experiment, so the authors could not have known it beforehand.
- D This point is irrelevant to the authors' work; only one neurotransmitter, serotonin, is discussed.
- E **Correct.** Lines 9–12 show that this increase had already been observed.

The correct answer is E.

78. According to the passage, one reason that the authors gave rats carbohydrates was to
- (A) depress the rats' tryptophan levels
  - (B) prevent the rats from contracting diseases
  - (C) cause the rats to produce insulin
  - (D) demonstrate that insulin is the most important substance secreted by the body
  - (E) compare the effect of carbohydrates with the effect of proteins

#### Supporting ideas

The phrase *according to the passage* suggests that the answer is likely stated in the passage. Look at lines 22–26, which say *We then decided to see whether the secretion of the animal's own insulin similarly affected serotonin production. We gave the rats a carbohydrate-containing meal that we knew would elicit insulin secretion.* These sentences together show that the authors gave carbohydrates to the rats to cause the rats to secrete insulin.

- A Lines 26–29 show that the carbohydrate increased the blood tryptophan level.
- B Preventing disease was not part of the study.
- C **Correct.** The authors had already tried injecting insulin; they then gave the rats carbohydrates to stimulate insulin production.
- D The authors make no such claim about insulin.
- E The study involving protein came later, so this could not have been the reason for giving the rats carbohydrates.

The correct answer is C.

79. According to the passage, the more protein a rat consumes, the lower will be the
- (A) ratio of the rat's blood-tryptophan concentration to the amount of serotonin produced and released in the rat's brain
  - (B) ratio of the rat's blood-tryptophan concentration to the concentration in its blood of the other amino acids contained in the protein
  - (C) ratio of the rat's blood-tyrosine concentration to its blood-leucine concentration
  - (D) number of neurotransmitters of any kind that the rat will produce and release
  - (E) number of amino acids the rat's blood will contain

#### Supporting ideas

The phrase *according to the passage* suggests that the answer is likely stated in the passage. In lines 41–43, the authors state: *The more protein is in a meal, the lower is the ratio of the resulting blood-tryptophan concentration to the concentration of competing amino acids ....*

- A While lower levels of blood-tryptophan lead to lower serotonin levels, the relationship is not discussed in terms of a ratio.
- B **Correct.** Lines 41–43 show this to be the correct answer choice.
- C This relationship is not demonstrated in the passage.
- D This point is not made in the passage.
- E Lines 38–40 explain that *consumption of protein increases blood concentration of the other amino acids much more ....* Since proteins are made up of amino acids, eating protein would logically increase the number of amino acids.

**The correct answer is B.**

80. The authors' discussion of the "mechanism that provides blood tryptophan to the brain cells" (lines 34–35) is meant to

- (A) stimulate further research studies
- (B) summarize an area of scientific investigation
- (C) help explain why a particular research finding was obtained
- (D) provide supporting evidence for a controversial scientific theory
- (E) refute the conclusions of a previously mentioned research study

#### Logical structure

To find the purpose of this discussion, look at the context in which this reference occurs. At the beginning of the third paragraph, the authors note that, *surprisingly*, adding protein led to lower brain tryptophan and serotonin levels. The question is why were the levels lowered? *The answer lies* in the mechanism cited in lines 34–35. Therefore, the discussion of the mechanism is meant to explain a surprising research finding.

- A No further studies are mentioned.
- B There are summaries of several studies, but there is no summary of an entire area of scientific investigation.
- C **Correct.** The mechanism helps explain the surprising finding about lower brain tryptophan and serotonin levels.
- D No theory is advanced, nor is any evidence about it provided.
- E There is no attempt to refute any other study.

**The correct answer is C.**



81. According to the passage, an injection of insulin was most similar in its effect on rats to an injection of
- (A) tyrosine
  - (B) leucine
  - (C) blood
  - (D) tryptophan
  - (E) protein

### Supporting ideas

Since the question refers to information given in the passage, the answer can be found by careful reading. In order to find an injection with a similar effect, look first at the effect of injecting insulin. In lines 20–22, the authors state that *injecting insulin ... caused parallel elevations in blood and brain tryptophan levels and in serotonin levels*. The only other reference to injection occurs earlier in lines 10–13 where rats injected with tryptophan had increased serotonin levels; injecting tryptophan would obviously cause tryptophan levels to increase. Thus, the effects of injecting insulin were similar to the effects of injecting tryptophan.

- A No evidence suggests that tyrosine injection would have similar effects.
- B The studies did not involve injecting leucine.
- C The studies did not involve injecting blood.
- D **Correct.** According to the passage, injecting tryptophan raises serotonin and tryptophan levels just as injecting insulin does.
- E The studies involved eating protein, not injecting it; eating protein did not raise serotonin levels.

The correct answer is D.

82. It can be inferred from the passage that which of the following would be LEAST likely to be a potential source of aid to a patient who was not adequately producing and releasing serotonin?

- (A) Meals consisting almost exclusively of protein
- (B) Meals consisting almost exclusively of carbohydrates
- (C) Meals that would elicit insulin secretion
- (D) Meals that had very low concentrations of tyrosine
- (E) Meals that had very low concentrations of leucine

### Inference

Since this question asks for an inference, the answer is not directly stated in the passage; it must instead be derived from the information given. What kind of meals would NOT help a patient with low serotonin levels? Meals that increased serotonin would help the patient; meals that lowered serotonin would not. According to the last sentence in the passage, *the more protein in a meal, the less serotonin subsequently produced and released*. Therefore, high-protein meals would be LEAST likely to help the patient.

- A **Correct.** Meals with very high levels of protein would tend to lower serotonin and thus to be less beneficial for the patient with inadequate serotonin levels.
- B When rats ate a carbohydrate-containing meal, serotonin increased (lines 25–29). Therefore, these meals would tend to raise serotonin levels and so help the patient.
- C In the study, meals that elicited insulin secretion raised serotonin levels.
- D Since tyrosine is an amino acid found in protein, meals low in tyrosine would be low in protein and so would tend to raise serotonin levels and help the patient.
- E Since leucine is an amino acid found in protein, meals low in leucine would be low in protein and so would tend to raise serotonin levels and help the patient.

The correct answer is A.



83. It can be inferred from the passage that the authors initially held which of the following hypotheses about what would happen when they fed large amounts of protein to rats?
- (A) The rats' brain serotonin levels would not decrease.
  - (B) The rats' brain tryptophan levels would decrease.
  - (C) The rats' tyrosine levels would increase less quickly than would their leucine levels.
  - (D) The rats would produce more insulin.
  - (E) The rats would produce neurotransmitters other than serotonin.

#### Inference

When the authors discuss the results of adding protein to meals, they begin with the word *surprisingly* (line 30). The use of this word indicates that the results differed from the authors' initial hypotheses. The results showed lowered serotonin. It is reasonable to conclude that the researchers initially hypothesized that serotonin levels would not decrease.

- A **Correct.** The use of the word *surprisingly* in line 30 suggests that researchers thought serotonin levels would not decrease.
- B The researchers had expected that tryptophan levels would not decrease, *since protein contains tryptophan* (lines 32–34).
- C Since there is no discussion of the comparative levels of tyrosine and leucine, there was probably no hypothesis about these levels.
- D In the passage insulin is explicitly discussed in relation to carbohydrates, and plays no role at all in the discussion of protein; this very strongly suggests that insulin production played no role in the authors' decision to feed the rats large amounts of protein.
- E Serotonin is the only neurotransmitter discussed in the research, so it is unlikely that the researchers had an initial hypothesis involving other neurotransmitters.

The correct answer is A.

Questions 84–86 refer to the passage on page 398.

84. The passage suggests that WIDC differed from WTUL in which of the following ways?
- (A) WIDC believed that the existing safety regulations were adequate to protect women's health, whereas WTUL believed that such regulations needed to be strengthened.
  - (B) WIDC believed that unions could not succeed in pressuring employers to comply with such regulations, whereas WTUL believed that unions could succeed in doing so.
  - (C) WIDC believed that lead poisoning in white lead factories could be avoided by controlling conditions there, whereas WTUL believed that lead poisoning in such factories could not be avoided no matter how stringently safety regulations were enforced.
  - (D) At the time that the legislation concerning white lead factories was proposed, WIDC was primarily concerned with addressing health conditions in white lead factories, whereas WTUL was concerned with improving working conditions in all types of factories.
  - (E) At the time that WIDC was opposing legislative attempts to restrict women's labor, WTUL had already ceased to do so.

#### Inference

To answer this question you need to understand the differences between WIDC and WTUL as they are described in the passage. The only information about WTUL in the passage is that it had stopped opposing restrictions on women's labor in the late 1880s, and that, because existing safety regulations were not being enforced, it supported the proposal to prohibit women from working in white lead factories. WIDC, on the other hand, was formed in 1892 specifically to oppose restrictions on women's labor, and it opposed the proposal.

- A According to the passage, WIDC did believe that existing safety regulations, if enforced, could prevent lead poisoning. WTUL may or may not have believed that the safety regulations needed to be strengthened; all the passage states is that WTUL did not believe that the safety regulations were likely to be enforced.
- B The passage states that WTUL believed that because there were no unions to pressure employers, the employers would not comply with safety regulations. The passage does not present any information on which to base a conclusion about WIDC's beliefs regarding union pressure on employers.
- C Based on information in the passage, both WIDC and SPEW believed that enforcing safety regulations could protect women against lead poisoning. WIDC supported SPEW's position on the matter. WTUL believed that safety regulations were unlikely to be enforced because of the lack of unions.
- D The passage states that WIDC viewed the proposal to restrict women's employment in white lead factories as an instance of legislation designed to limit women's work opportunities—precisely the legislation that WIDC was formed to oppose. Thus, WIDC was not primarily concerned with the factories' health conditions.
- E **Correct.** WIDC began opposing legislative attempts to restrict women's labor in 1892 and continued to do so through at least 1895, when the Home Secretary proposed prohibiting women from working in white lead factories. WTUL stopped opposing restrictions on women's labor in the late 1880s, before WIDC was even founded. Thus, the passage suggests that WTUL had stopped opposing restrictions on women's labor well before WIDC worked to oppose such legislation.

The correct answer is E.

85. Which of the following, if true, would most clearly support the contention attributed to SPEW in lines 17–20?
- (A) Those white lead factories that most strongly enforced regulations concerning worker safety and hygiene had the lowest incidences of lead poisoning among employees.
- (B) The incidence of lead poisoning was much higher among women who worked in white lead factories than among women who worked in other types of factories.
- (C) There were many household sources of lead that could have contributed to the incidence of lead poisoning among women who also worked outside the home in the late nineteenth century.
- (D) White lead factories were more stringent than were certain other types of factories in their enforcement of workplace safety regulations.
- (E) Even brief exposure to the conditions typically found in white lead factories could cause lead poisoning among factory workers.

#### Evaluation

This question requires the reader to find a statement that would provide additional support for the contention made in the following statement: *SPEW contended, and WIDC concurred, that controllable conditions in such factories were responsible for the development of lead poisoning.* Information suggesting that when conditions were controlled, lead poisoning was less likely to develop would provide support for SPEW's contention.

- A **Correct.** If incidences of lead poisoning were low in those factories that enforced hygiene and safety regulations, that would suggest that lead poisoning was not an inevitable result of working in a white lead factory—but rather that lead poisoning was the result of poor hygiene and safety practices.

- B It would not be particularly surprising for the incidence of lead poisoning to be higher among women working in white lead factories than among women working in other kinds of factories—but such a finding would say nothing about whether controllable conditions had any effect on the development of lead poisoning.
- C The existence of household sources of lead that might contribute to lead poisoning would weaken, not support, SPEW's contention that controllable factory conditions were responsible for the development of lead poisoning.
- D If white lead factories enforced workplace safety regulations more stringently than did some other types of factories, it might be the case that SPEW's contention was incorrect: that even controlled conditions could not prevent a high incidence of lead poisoning.
- E If the conditions typically found in white lead factories were particularly bad with regard to safety and hygiene, it could conceivably be the case that SPEW's contention was true—that is, that the conditions that caused lead poisoning were controllable. But it might also be the case that an uncontrollable aspect of those conditions caused lead poisoning. Thus, this neither supports nor undermines SPEW's contention clearly.

**The correct answer is A.**

86. The passage is primarily concerned with
- (A) presenting various groups' views of the motives of those proposing certain legislation
- (B) contrasting the reasoning of various groups concerning their positions on certain proposed legislation
- (C) tracing the process whereby certain proposed legislation was eventually enacted
- (D) assessing the success of tactics adopted by various groups with respect to certain proposed legislation
- (E) evaluating the arguments of various groups concerning certain proposed legislation

### Main idea

Answering this question depends on identifying the overall point of the passage. The passage is mainly concerned with explaining the reasons behind the positions taken by WIDC and SPEW, which opposed the proposal to enact legislation prohibiting women from holding most white lead factory jobs, and the reasoning of WTUL, which supported the proposal.

- A The passage explains how WIDC viewed the proposal, but it does not indicate what any of the groups believed about the motivations of the Home Secretary, who made the proposal.
- B **Correct.** The passage contrasts the reasoning of the WIDC and SPEW, both of which believed that enforcing safety regulations would make the proposed legislation unnecessary, with the reasoning of WTUL, which thought that safety regulations were unlikely to be enforced and thus supported the proposal.
- C The passage simply states that the proposal was eventually enacted; it does not trace the process by which this occurred.
- D The passage implies that WIDC and SPEW were unsuccessful in their opposition to the proposed legislation, but it identifies only one tactic used in opposition to it: SPEW's attempt to challenge it by investigating the causes of lead poisoning.
- E The passage does not evaluate the groups' arguments concerning the proposed legislation; rather, it presents those arguments without comment on their quality or value.

**The correct answer is B.**

Questions 87–92 refer to the passage on page 400.

87. The primary purpose of the passage is to
- (A) evaluate a research study
- (B) summarize the history of a research area
- (C) report new research findings
- (D) reinterpret old research findings
- (E) reconcile conflicting research findings

# Main idea

Determining the primary purpose comes from examining what the author does in the entire passage. In the first paragraph, the author explains Duverger's work on women's electoral participation. In the second paragraph the author points out both the successes and failures of that work. The purpose of this passage, then, is to evaluate Duverger's study.

- A **Correct.** The author evaluates Duverger's study of women's electoral activities.
- B This passage examines only one research study, not an entire research area.
- C Duverger's work was published in 1955; its findings are not new.
- D The author explains and evaluates Duverger's findings but does not reinterpret them.
- E The author's discussion of Duverger's work does not reveal or attempt to reconcile conflicting findings.

**The correct answer is A.**

88. According to the passage, Duverger's study was unique in 1955 in that it
- (A) included both election data and survey data
  - (B) gathered data from sources never before used in political studies
  - (C) included an analysis of historical processes
  - (D) examined the influence on voting behavior of the relationships between women and men
  - (E) analyzed not only voting and political candidacy but also other political activities

# Supporting ideas

This question is based on information specifically stated in the first sentence of the passage. The author introduces Duverger's work by calling it the first study of *women's electoral participation ever to use election data and survey data together* (lines 3–5).

- A **Correct.** Duverger's work was unique because it used election data and survey data together.
- B The two data types had never before been used together in such a study; they may well have been used separately in many earlier political studies.
- C The second paragraph states that Duverger placed his findings in the context of historical processes, but not that he was unique in doing so (lines 15–17).
- D Duverger compared the frequency and direction of voting between men and women, not the effect that their relationships had on voting (line 27).
- E Duverger's work analyzed political activism, but the author does not claim that it was unique in doing so (lines 5–6).

**The correct answer is A.**

89. Which of the following characteristics of a country is most clearly an example of a factor that Duverger, as described in the passage, failed to consider in his study?
- (A) A large population
  - (B) A predominantly Protestant population
  - (C) A predominantly urban population
  - (D) A one-party government
  - (E) Location in the heart of Europe

# Inference

In the second paragraph, the author notes Duverger's *failure to consider . . . the influence of political regimes, the effects of economic factors, and the ramifications of political and social relations between women and men* (lines 22–27). This question requires checking this list from the passage against the possible answers; the only point of convergence is the system of government. A system of government in which there is only one political party is a type of political regime.



- A The author does not say that Duverger failed to consider the size of the population.
- B No evidence shows that Duverger failed to consider the predominance of a religion.
- C The author does not say that Duverger failed to consider the location of the population.
- D **Correct.** According to the author of the passage, Duverger failed to consider *the influence of political regimes*.
- E Duverger is not faulted for failing to consider the location of the countries that he studied.

The correct answer is D.

90. The author implies that Duverger's actual findings are
- (A) limited because they focus on only four countries
  - (B) inaccurate in their description of the four countries in the early 1950s
  - (C) out-of-date in that they are inapplicable in the four countries today
  - (D) flawed because they are based on unsound data
  - (E) biased by Duverger's political beliefs

#### Inference

Since the question uses the word *implies*, the answer involves making an inference based on the information in the text. The second paragraph evaluates Duverger's work. The author notes that Duverger *placed his findings in the context of many of the historical processes*. Because these contexts have changed since 1955, the author holds that *Duverger's approach has proved more durable than his actual findings*. The actual findings, then, are out-of-date and irrelevant to the countries today.

- A The limitations the author brings up in the second paragraph have no connection to the number of countries studied.
- B The limitations the author brings up in the second paragraph do not suggest that the findings were inaccurate; rather, they were, in the author's view, significantly incomplete.

- C **Correct.** The actual findings, unlike the research method, are out-of-date and inapplicable today.
- D The limitations the author brings up in the second paragraph do not suggest that Duverger's data were unsound; rather, in the author's view, they were incomplete and have become dated.
- E The limitations the author brings up in the second paragraph do not suggest that Duverger's findings were politically biased; rather, in the author's view, they did not take full enough account of politics.

The correct answer is C.

91. The passage implies that, in comparing four European countries, Duverger found that the voting rates of women and men were most different in the country in which women
- (A) were most politically active
  - (B) ran for office most often
  - (C) held the most conservative political views
  - (D) had the most egalitarian relations with men
  - (E) had possessed the right to vote for the shortest time

#### Inference

The comparison of voting rates is discussed at the end of the first paragraph and forms the basis for the required inference. Duverger found that *women voted somewhat less frequently than men* but that this difference narrowed *the longer the women had the vote* (lines 9–11). That is, there was an ongoing process of convergence in voting rates for women and men, as the time period for which women had the vote lengthened. This suggests that at one end, when women had been voting for the shortest time, voting rates were most dissimilar, and at the other end, when women had been voting for the longest time, the rates were most similar.



- A Women's political activism is not suggested as a reason for the difference.
- B Women's political candidacy is not suggested as a reason for the difference.
- C Women's political views are not suggested as a reason for the difference.
- D Women's egalitarian relations with men are not suggested as a reason for the difference.
- E **Correct.** Duverger's finding is of (apparently steady, ongoing) convergence in voting-frequency rates between women and men over time. This supports the inference that the shorter the time period, the less convergence—i.e., the more divergence—there is in voting-frequency rates.

**The correct answer is E.**

92. The author implies that some behavioralist research involving the multinational study of women's political participation that followed Duverger's study did which of the following?

- (A) Ignored Duverger's approach
- (B) Suffered from faults similar to those in Duverger's study
- (C) Focused on political activism
- (D) Focused on the influences of political regimes
- (E) Focused on the political and social relations between women and men

#### Inference

The final sentence of the passage links Duverger's study to behavioralist work in general. After noting Duverger's failure to consider several important elements, the author observes, *Duverger's study foreshadowed the enduring limitations of the behavioralist approach to the multinational study of women's political participation* (lines 28–31). Thus, it is reasonable to infer that the author is of the opinion that the behavioralist research that followed Duverger's study suffered from the same limitations.

- A The author does not imply that other behavioralists ignored Duverger's approach.
- B **Correct.** The author says that Duverger's work revealed the *enduring limitations* also found in later behavioralist research.

- C This is not obviously a limitation at all, let alone one that Duverger's study suffered from.
- D This is not obviously a limitation at all, let alone one that Duverger's study suffered from.
- E This is not obviously a limitation at all, let alone one that Duverger's study suffered from.

**The correct answer is B.**

Questions 93–98 refer to the passage on page 402.

93. According to the passage, senior managers use intuition in all of the following ways EXCEPT to
- (A) speed up the creation of a solution to a problem
  - (B) identify a problem
  - (C) bring together disparate facts
  - (D) stipulate clear goals
  - (E) evaluate possible solutions to a problem

#### Supporting ideas

To answer this question, look for information explicitly stated in the passage. The third paragraph of the passage describes the five ways that senior managers use intuition. To find the one way that is NOT described, go back to the paragraph and check the possible answers against the list of the ways provided in the paragraph. The list includes all the answer choices except stipulating clear goals.

- A Lines 39–40 state that intuition allows managers to *move rapidly to engender a plausible solution*.
- B Lines 22–23 explain that managers use intuition to *sense when a problem exists*.
- C Lines 28–29 say the third function of intuition is *to synthesize isolated bits of data and practice into an integrated picture*.
- D **Correct.** Stipulating clear goals is not linked with managers' use of intuition.
- E Lines 30–38 show that managers use intuition *as a check on the results of more rational analysis*, when they are *leery of solutions suggested by these methods*.

**The correct answer is D.**

94. The passage suggests which of the following about the “writers on management” mentioned in line 12?
- (A) They have criticized managers for not following the classical rational model of decision analysis.
  - (B) They have not based their analyses on a sufficiently large sample of actual managers.
  - (C) They have relied in drawing their conclusions on what managers say rather than on what managers do.
  - (D) They have misunderstood how managers use intuition in making business decisions.
  - (E) They have not acknowledged the role of intuition in managerial practice.

#### Inference

Answering this question depends on making an inference from the passage. The second paragraph dismisses most *writers on management* for displaying a *poor grasp of what intuition is* (line 15). The third paragraph, in contrast, describes Isenberg’s research, which shows that *senior managers use intuition in at least five distinct ways* (lines 21–22), and those ways are then discussed in more detail. It can be inferred that Isenberg understands what most *writers on management* do not: how managers use intuition in making business decisions.

- A The passage does not link these writers with such a critique of managers.
- B No mention is made in the passage of the writers’ methods.
- C The passage does not indicate that the writers have examined words at the expense of actions.
- D **Correct.** According to the passage, the writers do not understand what intuition is or how managers apply it.
- E According to lines 12–15, the writers have acknowledged that *some practicing managers rely heavily on intuition*, but the writers fail to understand how or why.

The correct answer is D.

95. Which of the following best exemplifies “an ‘Aha!’ experience” (line 30) as it is presented in the passage?
- (A) A manager risks taking an action whose outcome is unpredictable to discover whether the action changes the problem at hand.
  - (B) A manager performs well-learned and familiar behavior patterns in creative and uncharacteristic ways to solve a problem.
  - (C) A manager suddenly connects seemingly unrelated facts and experiences to create a pattern relevant to the problem at hand.
  - (D) A manager rapidly identifies the methodology used to compile data yielded by systematic analysis.
  - (E) A manager swiftly decides which of several sets of tactics to implement in order to deal with the contingencies suggested by a problem.

#### Application

Finding an example involves applying the information in the passage to new situations. How do managers reach an “Aha!” experience? Lines 28–29 clearly explain that this experience is the result of the managers’ ability *to synthesize isolated bits of data and practice into an integrated picture*. Managers connect apparently unrelated pieces of information and elements of their previous experience, and, through these unexpected connections, produce a unified picture or pattern.

- A This managerial style is mentioned in the last paragraph, but not as defining the “Aha!” experience.
- B Lines 23–27 indicate that managers use intuition *to perform well-learned behavior patterns rapidly*, but the result is not an “Aha!” experience.
- C **Correct.** Through an intuitive appreciation of the subtle interrelationships of disparate facts and experiences, the manager all at once perceives the coherent overarching pattern or picture formed by the interconnections, which lines 28–29 define as an “Aha!” experience.
- D Lines 34–38 show that managers do possess this ability, but it does not culminate in an “Aha!” experience.
- E This managerial style is also related to the second function of intuition, *to perform well-learned behavior patterns rapidly* (lines 23–27), but does not define an “Aha!” experience.

The correct answer is C.

96. According to the passage, the classical model of decision analysis includes all of the following EXCEPT

- (A) evaluation of a problem
- (B) creation of possible solutions to a problem
- (C) establishment of clear goals to be reached by the decision
- (D) action undertaken in order to discover more information about a problem
- (E) comparison of the probable effects of different solutions to a problem

### Supporting ideas

What does the passage say about the classical model of decision analysis? The first sentence defines the classical model as *clarifying goals, assessing the problem, formulating options, estimating likelihoods of success, making a decision, and only then taking action to implement the decision*. To solve this process-of-elimination question, check the given list against the possible answers in order to find the one that does not match. Note that the exact wording in the answers may differ from that in the passage; the match is based on underlying meaning.

- A Evaluating a problem is identified as *assessing the problem*.
- B Creating solutions is identified as *formulating options*.
- C Establishing goals is identified as *clarifying goals*.
- D **Correct.** Acting in order to learn more about the problem is not identified in the passage as part of the rational classical model. It does appear as part of the acting/thinking cycle in the last paragraph.
- E Comparing probable effects is identified as *estimating likelihoods of success*.

The correct answer is D.

97. It can be inferred from the passage that which of the following would most probably be one major difference in behavior between Manager X, who uses intuition to reach decisions, and Manager Y, who uses only formal decision analysis?

- (A) Manager X analyzes first and then acts; Manager Y does not.
- (B) Manager X checks possible solutions to a problem by systematic analysis; Manager Y does not.
- (C) Manager X takes action in order to arrive at the solution to a problem; Manager Y does not.
- (D) Manager Y draws on years of hands-on experience in creating a solution to a problem; Manager X does not.
- (E) Manager Y depends on day-to-day tactical maneuvering; Manager X does not.

### Application

To answer this question, apply the information in the passage to the specific examples of Manager X, an intuitive decision maker, and Manager Y, who relies exclusively on formal decision analysis. The first paragraph distinguishes between the process of formal decision analysis, in which a decision is made and then action is taken (lines 4–5), and the process of intuition, in which action is integrated into the process of thinking (lines 10–11). The last paragraph reinforces the definition of the intuitive manager as one for whom “*thinking*” is *inseparable from acting* and *action is often part of defining the problem*. Manager X is likely to act as part of the process of solving a problem, but Manager Y is not.

- A Acting only after analysis characterizes the rational model, not intuition.
- B Systematic analysis is typical of the rational model, not intuition.
- C **Correct.** An intuitive manager acts as a step within the problem-solving process, but a manager who depends on formal decision analysis acts only after making a decision.
- D Drawing on experience is linked in the passage with intuition rather than with rational analysis; the passage does not suggest that managers who use formal decision analysis would ignore their experience in so doing.

- E Day-to-day tactical maneuvers are required of all managers.

The correct answer is C.

98. The passage provides support for which of the following statements?
- (A) Managers who rely on intuition are more successful than those who rely on formal decision analysis.
  - (B) Managers cannot justify their intuitive decisions.
  - (C) Managers' intuition works contrary to their rational and analytical skills.
  - (D) Logical analysis of a problem increases the number of possible solutions.
  - (E) Intuition enables managers to employ their practical experience more efficiently.

#### Logical structure

This question asks the reader to select the statement for which there is the most justification in the passage. The entire passage places value on the use of intuition, so the answer to this question is bound to show a benefit of intuition. Lines 25–27 reveal that intuition is based on *years of painstaking practice and hands-on experience* and lines 38–40 explain that, in contrast to formal decision analysis, intuition allows managers to *move rapidly to engender a plausible solution*. Thus, intuition enables managers to apply their experience quickly and productively, that is, efficiently.

- A The first paragraph acknowledges that most successful managers are intuitive, but it does not go so far as to make this comparison.
- B There is no support for or against this statement in the passage; Isenberg's research shows why intuition is beneficial, but does not address how managers justify their decisions.
- C Intuition does not compete with rational analysis, but complements it; line 25 provides an assurance that intuition is *not arbitrary or irrational*.
- D The passage does not support this claim for logical analysis.

- E **Correct.** Managers can reach decisions more efficiently through an intuitive approach based on experience than through time-consuming formal analyses.

The correct answer is E.

Questions 99–103 refer to the passage on page 404.

99. The passage is primarily concerned with
- (A) identifying two practices in medical research that may affect the accuracy of clinical trials
  - (B) describing aspects of medical research that tend to drive up costs
  - (C) evaluating an analysis of certain shortcomings of current medical research practices
  - (D) describing proposed changes to the ways in which clinical trials are conducted
  - (E) explaining how medical researchers have traditionally conducted clinical trials and how such trials are likely to change

#### Main idea

This question requires an understanding of what the passage as a whole is doing. The passage introduces Frazier and Mosteller as proposing changes to the ways clinical trials in medical research are currently conducted. The rest of the passage then describes these proposed changes together with the support Frazier and Mosteller provide for adopting these changes.

- A The passage identifies practices in medical research to help illustrate the basis for Frazier and Mosteller's proposed changes.
- B The passage mentions medical research costs as one example within the larger description of Frazier and Mosteller's proposed changes.
- C The passage is not concerned with evaluating Frazier and Mosteller's proposed changes.
- D **Correct.** The passage describes the changes proposed by Frazier and Mosteller to the way clinical trials are conducted.
- E The passage is not concerned with establishing the likelihood of any changes to the way medical research is conducted.

The correct answer is D.



100. Which of the following can be inferred from the passage about a study of the category of patients referred to in lines 21–23?
- (A) Its findings might have limited applicability.
  - (B) It would be prohibitively expensive in its attempt to create ideal conditions.
  - (C) It would be the best way to sample the total population of potential patients.
  - (D) It would allow researchers to limit information collection without increasing the risk that important variables could be overlooked.
  - (E) Its findings would be more accurate if it concerned treatments for a progressive disease than if it concerned treatments for a nonprogressive disease.

#### Inference

This question requires drawing an inference from information given in the passage. In describing the proposals put forth by Frazier and Mosteller, the passage states in lines 16–21 that they propose using more patients in clinical trials than are currently being used, and that the trials would thereby obtain *a more representative sample of the total population with the disease under study*. The passage then states that researchers often *restrict* (lines 21–23) their trials to certain types of patients, therefore limiting the applicability of their findings.

- A Correct.** The passage states that the researchers preferred to restrict the types of patients used in their studies, thereby using a less representative sample than if they used a more inclusive group of patients.
- B** The passage mentions the added expense of clinical trials only in relation to data storage, collection, and analysis.
- C** The passage describes the category of patients referred to as restricted and therefore unrepresentative of the total population.
- D** While the passage does mention the amount of data collected about an individual patient, that topic is not connected to the category of patients referred to in lines 21–23.

- E** The passage does not suggest that a study using the category of patients referred to would be more effective in investigating progressive diseases.

**The correct answer is A.**

101. It can be inferred from the passage that a study limited to patients like those mentioned in lines 21–23 would have which of the following advantages over the kind of study proposed by Frazier and Mosteller?
- (A) It would yield more data and its findings would be more accurate.
  - (B) It would cost less in the long term, though it would be more expensive in its initial stages.
  - (C) It would limit the number of variables researchers would need to consider when evaluating the treatment under study.
  - (D) It would help researchers to identify subgroups of patients with secondary conditions that might also be treatable.
  - (E) It would enable researchers to assess the value of an experimental treatment for the average patient.

#### Inference

This question requires understanding what the information in the passage implies. The passage explains that Frazier and Mosteller's proposal involves enrolling more patients in clinical trials (lines 18–19) than is the case with the category of patients referred to. The passage then explains that broadening the range of trial participants would allow an evaluation of particular treatments *under various conditions and for different patient subgroups* (lines 29–30). This strongly suggests that limiting the patients used to those described in the referred text would limit the number of variables researchers would need to consider.

- A** The passage suggests that not limiting the patients used in clinical trials will yield more data than restricting them will.
- B** The passage refers to the costs of clinical trials only as it concerns the collection, storage, and analysis of data collected from participants.



- C Correct.** By limiting the patients used to those having the ailment under study, the passage suggests that researchers need to consider fewer variables in their assessment of a treatment.
- D** The passage suggests that *not* limiting the types of patients used in clinical trials will better allow researchers to evaluate subgroups.
- E** The passage suggests that limiting the types of patients available for clinical trials results in data for specific, rather than average, populations.

**The correct answer is C.**

102. The author mentions patients' ages (line 33) primarily in order to
- (A) identify the most critical variable differentiating subgroups of patients
- (B) cast doubt on the advisability of implementing Frazier and Mosteller's proposals about medical research
- (C) indicate why progressive diseases may require different treatments at different stages
- (D) illustrate a point about the value of enrolling a wide range of patients in clinical trials
- (E) substantiate an argument about the problems inherent in enrolling large numbers of patients in clinical trials

#### Evaluation

Answering this question requires understanding how a particular piece of information functions in the passage as a whole. The passage is concerned with describing the proposals of Frazier and Mosteller. One of these proposals, described in the second paragraph, involves broadening the range of participants used in clinical trials. The passage states that in following this proposal, Frazier and Mosteller suggest that the effectiveness of treatments can be assessed for different patient subgroups. To affirm the value of broadening the range of participants, the passage then cites two examples of criteria by which relevant subgroups might be identified: disease stages and patients' ages.

- A** The passage makes no judgment as to the value of the subgroups it refers to in relation to broadened participation in clinical trials.
- B** The passage does not call into question the potential effectiveness of Frazier and Mosteller's proposals.
- C** The passage's example of patients' ages is not intended to be causally connected to its previous example regarding progressive diseases.
- D Correct.** Patients' ages are referred to in the passage to identify subgroups that could be evaluated if the range of participants in clinical trials were broadened.
- E** The passage refers to patients' ages in support of Frazier and Mosteller's proposal that more patients be used in clinical trials.

**The correct answer is D.**

103. According to the passage, which of the following describes a result of the way in which researchers generally conduct clinical trials?
- (A) They expend resources on the storage of information likely to be irrelevant to the study they are conducting.
- (B) They sometimes compromise the accuracy of their findings by collecting and analyzing more information than is strictly required for their trials.
- (C) They avoid the risk of overlooking variables that might affect their findings, even though doing so raises their research costs.
- (D) Because they attempt to analyze too much information, they overlook facts that could emerge as relevant to their studies.
- (E) In order to approximate the conditions typical of medical treatment, they base their methods of information collection on those used by hospitals.

### Supporting ideas

This question asks for an identification of specific information given in the passage. The passage describes the proposals of Frazier and Mosteller as attempting to improve the way clinical trials have generally been conducted. In describing how current trials are generally conducted, the passage states that researchers collect *far more background information on patients than is strictly required for their trials* (lines 4–6) and that they therefore escalate the costs of the trials.

- A **Correct.** The passage states that researchers generally collect more information than they need to perform their clinical trials, which drives up the costs of the trials.
- B The passage makes no judgment about the accuracy of the information collected by researchers who currently hold clinical trials.
- C The passage states that the risk of overlooking relevant information in clinical trials is *never entirely eliminable* (lines 11–12).
- D The passage states that researchers generally collect more information than is relevant, not that they overlook relevant information.
- E The passage states that, in general, researchers currently collect more information than hospitals do (line 6).

**The correct answer is A.**

Questions 104–110 refer to the passage on page 406.

104. The author is primarily concerned with
- (A) advocating a return to an older methodology
  - (B) explaining the importance of a recent theory
  - (C) enumerating differences between two widely used methods
  - (D) describing events leading to a discovery
  - (E) challenging the assumptions on which a theory is based

### Main idea

Examine the entire passage to find the author's primary concern. An analysis of this passage shows that the author introduces a recent theory in the first paragraph, explains the practical importance of the theory in the second, and discusses the methods of exploration the theory makes possible in the third and fourth paragraphs. The author is primarily concerned with presenting a new theory and showing why it is important.

- A The only older methodology cited in the passage, *simple prospecting methods*, leads to only an *occasional discovery* (lines 15–17); there is no indication that the author favors this.
- B **Correct.** The author describes a recent theory of ore formation and discusses its importance.
- C Three methods of exploration are described in the third paragraph, but differences among them are not discussed.
- D The passage describes a theory and the practice derived from it; it does not describe a series of events leading to a discovery.
- E The author describes two theories of ore formation in the first paragraph but does not challenge the assumptions on which either one is based.

**The correct answer is B.**

105. According to the passage, the widely held view of Archean-age gold-quartz vein systems is that such systems
- (A) were formed from metamorphic fluids
  - (B) originated in molten granite-like bodies
  - (C) were formed from alluvial deposits
  - (D) generally have surface expression
  - (E) are not discoverable through chemical tests

**Supporting ideas**

This question asks for information explicitly stated in the first paragraph where Archean-age gold-quartz vein systems are discussed. The recent theory is *contrary* to the *widely held* theory that Archean-age gold-quartz vein systems *were deposited from metamorphic fluids* (lines 6–7).

- A **Correct.** The widely held theory explains that the systems were *deposited from metamorphic fluids* (line 7).
- B It is the recent theory that holds that the systems were formed *from magmatic fluids that originated from molten granite-like bodies* (lines 3–4); the recent theory is not *the widely held view*.
- C Alluvial deposits are mentioned only in the context of *simple prospecting methods* (lines 14–16); there is nothing in the passage explicitly linking alluvial deposits to metamorphic fluids.
- D Lines 17–19 explain that most deposits *not yet discovered ... have no surface expression*, but there is no mention in the passage of widely held beliefs concerning surface expressions of the metamorphic fluids.
- E *Sensitive chemical tests* are able to detect deposits where mineralization has occurred (lines 27–29).

**The correct answer is A.**

106. The passage implies that which of the following steps would be the first performed by explorers who wish to maximize their chances of discovering gold?
- (A) Surveying several sites known to have been formed more than two billion years ago
  - (B) Limiting exploration to sites known to have been formed from metamorphic fluid
  - (C) Using an appropriate conceptual model to select a site for further exploration
  - (D) Using geophysical methods to analyze rocks over a broad area
  - (E) Limiting exploration to sites where alluvial gold has previously been found

**Inference**

Since the question uses the word *implies*, the answer will be an inference based on what the passage says about exploration. The third and fourth paragraphs describe the process of exploration. The high-technology methods are of no use to the explorer if the sites have not mineralized, *and to maximize the chances of discovery the explorer must therefore pay particular attention to selecting the ground formations most likely to be mineralized* (lines 30–35). Conceptual models based on observation and ore-formation theories allow the explorer to identify the areas most likely to be mineralized (lines 39–46).

- A Nothing in the passage indicates that a large portion of two-billion-year-old sites will have gold in them; it only indicates that if they are gold-quartz vein systems, they will be over two billion years old.
- B The widely held view, rather than the recent theory that is the focus of the passage, argued that gold-quartz vein systems were formed from metamorphic fluids. The passage says the recent theory has *considerable practical importance*, suggesting the benefits of applying the recent theory rather than this widely held view.
- C **Correct.** Conceptual models lead the explorer to the sites most likely to have mineralized.
- D Geophysical techniques are of no use unless ground formations in an area have been mineralized (lines 24–32).
- E The *simple prospecting methods* that find alluvial gold lead to only an *occasional discovery*; *most deposits not yet discovered ... are buried* (lines 15–19).

**The correct answer is C.**

107. Which of the following statements about discoveries of gold deposits is supported by information in the passage?
- (A) The number of gold discoveries made annually has increased between the time of the original gold rushes and the present.
  - (B) New discoveries of gold deposits are likely to be the result of exploration techniques designed to locate buried mineralization.
  - (C) It is unlikely that newly discovered gold deposits will ever yield as much as did those deposits discovered during the original gold rushes.
  - (D) Modern explorers are divided on the question of the utility of simple prospecting methods as a source of new discoveries of gold deposits.
  - (E) Models based on the theory that gold originated from magmatic fluids have already led to new discoveries of gold deposits.

#### Supporting ideas

This question requires consideration of explicit information throughout the passage. The second paragraph explains that *most deposits not yet discovered ... are buried* (lines 17–19), so the explorer's best means of discovering them is the use of *conceptual models* to identify the sites most likely to have buried minerals (lines 35–38). At that point, the explorer may use the high-technology methods possible when buried mineralization is present (lines 22–29).

- A The passage does not discuss the number of gold discoveries.
- B **Correct.** Since most gold deposits are buried, explorers must find the sites most likely to contain buried minerals.
- C The passage does not discuss the yield of gold discoveries.
- D While *simple prospecting methods* lead only to an *occasional discovery*, modern explorers are not said to dispute their utility (lines 15–17).
- E The passage does not say that gold deposits have already been found by using the models based on this recent theory.

The correct answer is B.

108. It can be inferred from the passage that which of the following is easiest to detect?
- (A) A gold-quartz vein system originating in magmatic fluids
  - (B) A gold-quartz vein system originating in metamorphic fluids
  - (C) A gold deposit that is mixed with granite
  - (D) A gold deposit that has shed alluvial gold
  - (E) A gold deposit that exhibits chemical halos

#### Application

To answer this question, apply what the passage says about gold deposits to the examples in the answer choices. The second paragraph states that the gold deposits discovered during the gold rushes were *exposed at the Earth's surface*; they were found because *they had shed trails of alluvial gold that were easily traced by simple prospecting methods* (lines 11–16). Most deposits have not been detected because they are buried and have *no surface expression*. Thus the simplest gold to find would be that in a deposit that had shed alluvial gold.

- A The recent theory holds that gold-quartz vein systems are formed from magmatic fluids, but does not say that these systems have easily detectable surface expressions; the passage states that they form deep beneath the surface of Earth, which makes it unlikely that they will be easy to find.
- B The widely held view contends that gold-quartz vein systems are formed from metamorphic fluids, but does not say if these have easily detectable surface expressions.
- C The passage does not comment on gold deposits mixed with granite, although the recent theory does mention *molten granite-like bodies deep beneath the surface of the Earth* (lines 4–5).
- D **Correct.** Finding gold deposits that have shed alluvial gold at the Earth's surface is far easier than finding buried gold deposits.
- E One complex, difficult subsurface exploration method involves chemical tests detecting the subtle chemical halos that surround mineralized areas; clearly this is not the *easiest* means of detecting gold deposits.

The correct answer is D.



109. The theory mentioned in lines 1–5 relates to the conceptual models discussed in the passage in which of the following ways?

- (A) It may furnish a valid account of ore-forming processes, and, hence, can support conceptual models that have great practical significance.
- (B) It suggests that certain geological formations, long believed to be mineralized, are in fact mineralized, thus confirming current conceptual models.
- (C) It suggests that there may not be enough similarity across Archean-age gold-quartz vein systems to warrant the formulation of conceptual models.
- (D) It corrects existing theories about the chemical halos of gold deposits, and thus provides a basis for correcting current conceptual models.
- (E) It suggests that simple prospecting methods still have a higher success rate in the discovery of gold deposits than do more modern methods.

#### Logical structure

This question requires considering the conceptual models described in lines 35–41 in light of the recent theory (lines 1–5), which the author assures the reader has *considerable practical importance* (lines 10–11). The conceptual models are derived from observation and from *theories of ore-forming processes*. Therefore, the recent theory may explain ore formation in a way that leads to the development of an updated model, and that model may then aid in the discovery of gold deposits.

- A **Correct.** The theory provides an explanation of ore formation, which aids in creating a conceptual model that may help explorers find gold deposits.
- B The theory does not confirm models, but contributes to forming them.
- C The practical value of the theory is that it can help to formulate models.
- D The theory does not challenge theories about chemical halos but rather contributes to the development of conceptual models that might allow for the broader application of chemical halos.
- E The theory does not compare methods of discovering gold deposits.

The correct answer is A.

110. According to the passage, methods of exploring for gold that are widely used today are based on which of the following facts?

- (A) Most of the Earth's remaining gold deposits are still molten.
- (B) Most of the Earth's remaining gold deposits are exposed at the surface.
- (C) Most of the Earth's remaining gold deposits are buried and have no surface expression.
- (D) Only one type of gold deposit warrants exploration, since the other types of gold deposits are found in regions difficult to reach.
- (E) Only one type of gold deposit warrants exploration, since the other types of gold deposits are unlikely to yield concentrated quantities of gold.

#### Supporting ideas

This question concerns factual information stated in the passage. In contrast to the gold deposits discovered at the Earth's surface, *most deposits not yet discovered have gone undetected because they are buried and have no surface expression* (lines 17–19). The *methods widely used today* must search for buried minerals rather than minerals on the surface (lines 22–29).

- A The passage mentions neither molten gold nor the method to detect it.
- B The passage explicitly says that most deposits are buried.
- C **Correct.** The passage explicitly states that most gold deposits are buried, leaving no traces at the Earth's surface.
- D The passage neither distinguishes between types of gold nor describes inaccessible regions.
- E The passage does not relate types of gold to yields of gold deposits.

The correct answer is C.



Questions 111–114 refer to the passage on page 408.

111. The passage mentions which of the following as a factor that affects the role of *P. ochraceus* as a keystone species within different habitats?
- (A) The degree to which the habitat is sheltered from waves
  - (B) The degree to which other animals within a habitat prey on mussels
  - (C) The fact that mussel populations are often not dominant within some habitats occupied by *P. ochraceus*
  - (D) The size of the *P. ochraceus* population within the habitat
  - (E) The fact that there is great species diversity within some habitats occupied by *P. ochraceus*

#### Supporting idea

This question depends on recognizing what the passage states about the factors affecting *P. ochraceus*'s role as a keystone species, which is different in different habitats. According to the passage, *P. ochraceus* consumes and suppresses mussel populations in some habitats—specifically, those that are wave-exposed—making it a keystone predator in those habitats. But in wave-sheltered habitats, *P. ochraceus* does not play the same role in suppressing mussel populations.

- A Correct.** The passage clearly states that *P. ochraceus*'s role in wave-exposed habitats differs from its role in wave-sheltered habitats.
- B** The passage says that the impact of *P. ochraceus* predation on mussels is not strong in wave-sheltered habitats, but this is not—at least not at all sites—because other animals are preying on the mussels; rather, at least at some sites, it is because mussels are controlled by sand burial.
- C** The passage does not suggest that mussel populations are dominant in any habitats occupied by *P. ochraceus*.

- D** The size of the *P. ochraceus* population affects the size of the mussel population within wave-exposed habitats, but the passage does not suggest that *P. ochraceus*'s role as a keystone species depends on the size of its population within those habitats.
- E** The only other species the passage mentions in conjunction with *P. ochraceus* habitats is the mussel; the passage does not address species diversity in these habitats.

**The correct answer is A.**

112. Which of the following hypothetical experiments most clearly exemplifies the method of identifying species' roles that the author considers problematic?
- (A) A population of seals in an Arctic habitat is counted in order to determine whether it is the dominant species in that ecosystem.
  - (B) A species of fish that is a keystone species in one marine ecosystem is introduced into another marine ecosystem to see whether the species will come to occupy a keystone role.
  - (C) In order to determine whether a species of monkey is a keystone species within a particular ecosystem, the monkeys are removed from that ecosystem and the ecosystem is then studied.
  - (D) Different mountain ecosystems are compared to determine how geography affects a particular species' ability to dominate its ecosystem.
  - (E) In a grassland experiencing a changing climate, patterns of species extinction are traced in order to evaluate the effect of climate changes on keystone species in that grassland.

#### Application

Answering this question depends on recognizing what the author says about identifying species' roles in habitats and then extending that to another situation. The author considers a particular method of studying keystone species problematic: removing a suspected keystone species from its habitat and observing what happens to the ecosystem. The author finds this problematic because interactions among species are complex.

- A The author does not discuss counting the members of a population as a problematic way of determining whether that population is a dominant species.
- B The method that the author finds problematic has to do with observing what happens to an ecosystem when a keystone species is removed from it, not with observing what happens to a different ecosystem when the species is introduced into it.
- C **Correct.** The author states explicitly that removing a species from a habitat in order to determine its keystone status is problematic. Removing the monkeys from their habitat is a clear example of this problematic practice.
- D Comparison of habitats in order to determine geography's effect on a particular species' dominance would most likely find favor with the author, for this is the approach the author seems to advocate in investigating *P. ochraceus*'s keystone status.
- E The author does not discuss tracing patterns of extinction or changing climates in the passage.

The correct answer is C.

113. Which of the following, if true, would most clearly support the argument about keystone status advanced in the last sentence of the passage (lines 24–31)?
- (A) A species of bat is primarily responsible for keeping insect populations within an ecosystem low, and the size of the insect population in turn affects bird species within that ecosystem.
  - (B) A species of iguana occupies a keystone role on certain tropical islands, but does not play that role on adjacent tropical islands that are inhabited by a greater number of animal species.
  - (C) Close observation of a savannah ecosystem reveals that more species occupy keystone roles within that ecosystem than biologists had previously believed.
  - (D) As a keystone species of bee becomes more abundant, it has a larger effect on the ecosystem it inhabits.
  - (E) A species of moth that occupies a keystone role in a prairie habitat develops coloration patterns that camouflage it from potential predators.

#### Evaluation

To answer this question, focus on the argument advanced in the last sentence of the passage and identify what information would support that argument. In the last sentence of the passage, the author claims that keystone status depends on context. The author then offers three contextual factors that may affect a species' keystone status: geography, community diversity (i.e., the number of species in a given habitat), and length of species interaction. Evidence supporting this argument would show that context is important to a species' keystone status.

- A This scenario does not indicate anything about keystone status; this is simply a description of how species populations in a single ecosystem affect one another.
- B **Correct.** That the iguana is a keystone species in a location that has limited species diversity but not a keystone species in a location that has greater species diversity suggests that keystone status does indeed depend on context. Thus, this example supports the author's argument in the last sentence of the passage.
- C That biologists were mistaken about keystone species in a particular ecosystem does not have a bearing on whether keystone status is context dependent.
- D It is not surprising that an increase in a species' population would lead to that species having a larger effect on its ecosystem—but this does not speak directly to the question of whether keystone status itself depends on context.
- E A keystone species enhancing its ability to survive in a single ecosystem does not lend any support to the idea that keystone status depends on context. The moth's keystone status would have to undergo some change for this to have a bearing on the question of context.

The correct answer is B.

114. The passage suggests which of the following about the identification of a species as a keystone species?

- (A) Such an identification depends primarily on the species' relationship to the dominant species.
- (B) Such an identification can best be made by removing the species from a particular ecosystem and observing changes that occur in the ecosystem.
- (C) Such an identification is likely to be less reliable as an ecosystem becomes less diverse.
- (D) Such an identification seems to depend on various factors within the ecosystem.
- (E) Such an identification can best be made by observing predation behavior.

#### Inference

Answering this question requires identifying how the passage suggests that keystone species should be identified. The passage identifies a particular way in which keystone status should *not* be determined: removing a species and observing what happens to the ecosystem. The passage also argues that keystone status depends strongly on context: that is, an ecosystem's characteristics, including its geography and inhabitants, determine its keystone species.

- A While the passage uses an example of a keystone species, *P. ochraceus*, which preys on a species that would, in the keystone species' absence, be dominant, there is nothing to suggest that a keystone species *must* have a particular relationship with the dominant, or potentially dominant, species in an ecosystem.
- B The passage explicitly states that this method of identification would be problematic.
- C A reduction in an ecosystem's diversity might alter which species occupy keystone roles in that ecosystem, the passage suggests, but there is no indication that identifying such species would become more difficult.

**D Correct.** If, as the passage suggests, keystone status for any given species depends on the context of the ecosystem in which it lives, then it is likely that identifying keystone species depends strongly on understanding what factors of the ecosystem contribute to creating keystone status. The passage lists such factors as geography, community diversity, and species interaction.

**E** While the passage uses a predator, *P. ochraceus*, as its example of a keystone species, there is no indication that predation is an essential component of the actual definition of keystone species (*one whose effects are much larger than would be predicted from its abundance*).

**The correct answer is D.**

Questions 115–119 refer to the passage on page 410.

115. The passage is primarily concerned with

- (A) defending a controversial approach
- (B) criticizing an accepted view
- (C) summarizing research findings
- (D) contrasting competing theories
- (E) describing an innovative technique

#### Main idea

Figuring out the authors' primary concern depends on a careful review of the passage as a whole. The first paragraph identifies the larger question that is the context for the authors' investigation. The second paragraph presents the part of the question the authors researched, concluding with their unexpected results. The third paragraph explains the importance of these findings in relation to the larger question of the universe's possible "*close*." The authors' primary purpose in this passage is to summarize the findings of their research.

- A The authors do not discuss approaches to the question they research.
- B The authors mention that their findings do not conform to Kepler's law, but the passage's primary focus is on summarizing research findings and not on criticizing any particular view.
- C **Correct.** This passage presents a summation of the findings of the authors' research.
- D The authors do not contrast different theories in this passage.
- E The authors do not discuss new techniques in this passage.

The correct answer is C.

116. The authors' study indicates that, in comparison with the outermost regions of a typical spiral galaxy, the region just outside the nucleus can be characterized as having
- (A) higher rotational velocity and higher luminosity
  - (B) lower rotational velocity and higher luminosity
  - (C) lower rotational velocity and lower luminosity
  - (D) similar rotational velocity and higher luminosity
  - (E) similar rotational velocity and similar luminosity

#### Inference

In the second paragraph, the authors observe that *outside the bright nucleus of a typical spiral galaxy luminosity falls off rapidly* (lines 20–21); the region just outside the nucleus may thus be characterized as having higher luminosity than the outermost regions of a spiral galaxy. Their research finds that *the rotational velocity in spiral galaxies either remains constant with increasing distance from the center or increases slightly* (lines 27–30). The region just outside the nucleus may thus be characterized as sharing with the outermost regions of a spiral galaxy a similar rotational velocity.

- A This region was expected to have higher rotational velocity, but the research findings did not corroborate this hypothesis; it is correct that the region has higher luminosity.
- B The region does have higher luminosity, but not lower rotational velocity.
- C The region has neither lower luminosity nor lower rotational velocity.
- D **Correct.** The region has similar rotational velocity and higher luminosity.
- E The region has similar rotational velocity but higher luminosity.

The correct answer is D.

117. The authors' suggestion that "as much as 90 percent of the mass of the universe is not radiating at any wavelength with enough intensity to be detected on the Earth" (lines 34–37) would be most weakened if which of the following were discovered to be true?
- (A) Spiral galaxies are less common than types of galaxies that contain little nonluminous matter.
  - (B) Luminous and nonluminous matter are composed of the same basic elements.
  - (C) The bright nucleus of a typical spiral galaxy also contains some nonluminous matter.
  - (D) The density of the observable universe is greater than most previous estimates have suggested.
  - (E) Some galaxies do not rotate or rotate too slowly for their rotational velocity to be measured.

#### Application

The authors' conclusion about nonluminous matter is based on their study of the rotational velocity of spiral galaxies. If spiral galaxies were found to be atypical of galaxies, then it would be possible that, in those other galaxies, nonluminous matter does not increase as luminous matter decreases. If this were the case, the authors' conclusion would be based on a sample of galaxies not representative of the whole, and their argument would be seriously weakened.



- A **Correct.** The authors' conclusion assumes that spiral galaxies are typical of all galaxies; information calling that assumption into question weakens the argument.
- B The relation rather than the composition of luminous and nonluminous mass is relevant to the conclusion.
- C Nonluminous mass increases as luminous mass decreases: This finding does not rule out that the nucleus contains some nonluminous mass; the argument is not affected.
- D The density of the observable universe is only *a fraction* of the density needed to "close" the universe, so even if this density were greater, it is not likely to exceed the density of nonluminous matter.
- E The authors are concerned only with measurable rotational velocity.

**The correct answer is A.**

118. It can be inferred from information presented in the passage that if the density of the universe were equivalent to significantly less than three hydrogen atoms per cubic meter, which of the following would be true as a consequence?
- (A) Luminosity would be a true indicator of mass.
  - (B) Different regions in spiral galaxies would rotate at the same velocity.
  - (C) The universe would continue to expand indefinitely.
  - (D) The density of the invisible matter in the universe would have to be more than 70 times the density of the luminous matter.
  - (E) More of the invisible matter in spiral galaxies would have to be located in their nuclei than in their outer regions.

## Inference

An inference is drawn from stated information.

This question refers to the first paragraph, where the authors explain that *the critical density of matter needed to brake the expansion and "close" the universe is equivalent to three hydrogen atoms per cubic meter* (lines 7–9). If the density is significantly less, then the universe will not "close" but continue to expand indefinitely.

- A The authors' finding that luminosity is not a true indicator of mass is not derived from the conclusion that the density is less than three hydrogen atoms per cubic meter.
- B The authors' finding that different regions rotate at similar velocities does not come from the hypothesis about the density of the universe.
- C **Correct.** If the critical density needed to "close" the universe is equivalent to three hydrogen atoms per cubic meter, then a density of significantly less than this amount means that the universe will continue its expansion.
- D This statement would be true of the hypothetical "close" of the universe, but if the density is less than three hydrogen atoms per cubic meter, the universe will continue its expansion.
- E This statement cannot be inferred from the hypothesis about the density of the universe.

**The correct answer is C.**

119. The authors propose all of the following as possibly contributing to the "missing matter" in spiral galaxies EXCEPT
- (A) massive black holes
  - (B) small black holes
  - (C) small, dim stars
  - (D) massive stars
  - (E) large planets



**Supporting ideas**

This question asks the reader to find the list of possible explanations for the “missing” or *dark matter* that the authors give in the passage and to check that list against the possible answers. Using the process of elimination will show which answer is not included on the authors’ list. In the final paragraph, the authors write, *Such dark matter could be in the form of extremely dim stars of low mass, of large planets like Jupiter, or of black holes, either small or massive* (lines 37–40).

- A The authors include massive black holes.
- B The authors include small black holes.
- C The authors include small, dim stars.
- D **Correct.** The authors do not include massive stars in their list of possible explanations for “missing matter.”
- E The authors include large planets.

**The correct answer is D.**

Questions 120–127 refer to the passage on page 412.

120. The primary purpose of the passage is to

- (A) advocate a more positive attitude toward technological change
- (B) discuss the implications for employees of the modernization of a telephone exchange
- (C) consider a successful challenge to the constructivist view of technological change
- (D) challenge the position of advocates of technological determinism
- (E) suggest that the social causes of technological change should be studied in real situations

**Main idea**

This question asks for an assessment of what the passage as a whole is doing. The passage introduces Clark’s study as a *solid contribution* (lines 3–4) to the debate between technological determinists and social constructivists. In the second paragraph, Braverman is introduced as holding a position of social constructivism, a position that Clark takes issue with. In the final paragraph, the passage holds that Clark *refutes the extremes of the constructivists* (line 33), and Clark’s arguments challenging social constructivism are then described.

- A The passage takes no position on the merits of technological change but is concerned only with the role of such change in society.
- B The passage mentions telephone exchange workers as an example that helps illustrate the more central debate between determinists and constructivists.
- C **Correct.** The passage is mainly concerned with portraying Clark’s view as a successful challenge to constructivism.
- D The passage describes Clark’s view as a successful challenge to social constructivism, not technological determinism.
- E The passage is concerned with describing a challenge to social constructivism and not with suggesting the context in which technological change ought to be studied.

**The correct answer is C.**

121. Which of the following statements about the modernization of the telephone exchange is supported by information in the passage?

- (A) The new technology reduced the role of managers in labor negotiations.
- (B) The modernization was implemented without the consent of the employees directly affected by it.
- (C) The modernization had an impact that went significantly beyond maintenance routines.
- (D) Some of the maintenance workers felt victimized by the new technology.
- (E) The modernization gave credence to the view of advocates of social constructivism.

### Supporting ideas

This question requires recognizing information contained in the passage. The passage states in the first paragraph that Clark's study focused on the modernization of a telephone exchange and the effect this had on maintenance work and workers. After describing Braverman's analysis in the second paragraph as being at odds with Clark's views, the passage discusses Clark's views in more detail in the final paragraph. As part of this discussion, the passage notes that Clark shows how a change from *maintenance-intensive electromechanical switches to semielectronic switching systems* at the telephone exchange *altered work tasks, skills, training opportunities, administration, and organization of workers* (lines 41–46). Thus, the passage shows that the modernization of the telephone exchange affected much more than maintenance routines.

- A The passage does not discuss whether new technology reduces the role of managers in labor negotiations.
- B The passage does not discuss the role of employee consent in the modernization of the telephone exchange.
- C **Correct.** The passage states that the modernization of the telephone exchange affected tasks, skills, training, administration, and the organization of workers.
- D The passage does not suggest that maintenance workers felt victimized by the modernization of the telephone exchange.
- E The passage describes modernization as a fact viewable from a perspective of social constructivism or technological determinism, but that does not in itself support either view.

**The correct answer is C.**

122. Which of the following most accurately describes Clark's opinion of Braverman's position?

- (A) He respects its wide-ranging popularity.
- (B) He disapproves of its misplaced emphasis on the influence of managers.
- (C) He admires the consideration it gives to the attitudes of the workers affected.

- (D) He is concerned about its potential to impede the implementation of new technologies.
- (E) He is sympathetic to its concern about the impact of modern technology on workers.

### Inference

Answering this question requires inferring what the passage's author likely believes. The passage describes Braverman's position as one of mainstream social constructivism (lines 23–24), a position that Clark takes issue with. Although it describes Braverman's position, the rest of the passage is devoted to showing how Clark's position takes issue with Braverman's. In the second paragraph, the passage describes Clark as holding that *technology can be a primary determinant of social and managerial organization* (lines 11–12), which suggests that managers are sometimes subordinate to technological change. In lines 16–19, however, Braverman is described as holding that *the shape of a technological system is subordinate to the manager's desire to wrest control of the labor process from the workers*, which shows that Clark and Braverman are at odds on this point.

- A Since the passage says that Clark believes an important insight *has been obscured by the recent sociological fashion* that Braverman's views exemplify (lines 12–15), one cannot infer that Clark respects the popularity of Braverman's views.
- B **Correct.** The passage shows that Clark believes managers to have less influence over how technology affects an organization than Braverman claims that they have.
- C The passage does not indicate that Clark admires any aspect of Braverman's position.
- D The passage does not indicate that Clark considers impediments to modernization.
- E The passage does not indicate that Clark is sympathetic to any concerns attributed to Braverman.

**The correct answer is B.**

123. The information in the passage suggests that which of the following statements from hypothetical sociological studies of change in industry most clearly exemplifies the social constructivists' version of technological determinism?
- (A) It is the available technology that determines workers' skills, rather than workers' skills influencing the application of technology.
  - (B) All progress in industrial technology grows out of a continuing negotiation between technological possibility and human need.
  - (C) Some organizational change is caused by people; some is caused by computer chips.
  - (D) Most major technological advances in industry have been generated through research and development.
  - (E) Some industrial technology eliminates jobs, but educated workers can create whole new skills areas by the adaptation of the technology.

#### Application

This question requires understanding different points of view discussed in the passage. In the first paragraph, the passage mentions the debate involving technological determinism and social constructivism. In the second and third paragraphs, the passage uses Braverman's analysis to illustrate the social constructivists' position and in the third paragraph suggests that the constructivists are *misrepresenting technological determinism* (lines 25–26). In lines 31–32, the constructivists are reported to hold that technological determinism views technology as *existing outside society, capable of directly influencing skills and work organization*.

- A **Correct.** This statement is consistent with the constructivists' view that technological determinism sees technology as outside of society, influencing workers' skills.
- B The passage states that the constructivists hold that *technological determinists are supposed to believe ... that machinery imposes appropriate forms of order on society* (lines 27–29), suggesting that no negotiation is present.

- C According to the description of them in the passage, constructivists portray technological determinists as believing that technology, not people, drives organizational change.
- D The passage does not portray either constructivists or determinists as being concerned with technological research and development.
- E The passage does not portray either constructivists or determinists as being concerned with technology-driven job elimination or creation.

**The correct answer is A.**

124. The information in the passage suggests that Clark believes that which of the following would be true if social constructivism had not gained widespread acceptance?

- (A) Businesses would be more likely to modernize without considering the social consequences of their actions.
- (B) There would be greater understanding of the role played by technology in producing social change.
- (C) Businesses would be less likely to understand the attitudes of employees affected by modernization.
- (D) Modernization would have occurred at a slower rate.
- (E) Technology would have played a greater part in determining the role of business in society.

#### Inference

Answering this question involves understanding a point of view as it is described in the passage. The passage aligns Clark's study closely with the technological determinists, summarizing his view in lines 11–12: *technology can be a primary determinant of social and managerial organization*. In the following sentence, the passage states that Clark believes that *this possibility is obscured by the recent sociological fashion, exemplified by Braverman's analysis* (lines 12–15). After illustrating Braverman's analysis, the passage then states that it represents *social constructivism*.

- A According to the passage, Clark holds that constructivists obscure how modernization might have social consequences.
- B **Correct.** According to the passage, Clark sees constructivism as obscuring the possibility that technology plays a primary role in social change.
- C The passage does not discuss how the attitudes of employees are perceived by their employers.
- D The passage describes a debate about the history and sociology of technology; it does not suggest that sociological analyses affect the pace of modernization.
- E The passage describes a debate about the history and sociology of technology; it does not suggest that sociological analyses affect the role that technology plays in business.

The correct answer is B.

125. According to the passage, constructivists employed which of the following to promote their argument?

- (A) Empirical studies of business situations involving technological change
- (B) Citation of managers supportive of their position
- (C) Construction of hypothetical situations that support their view
- (D) Contrasts of their view with a misstatement of an opposing view
- (E) Descriptions of the breadth of impact of technological change

#### Supporting ideas

Answering this question involves recognizing information given in the passage. The passage indicates that a debate exists between technological determinists and social constructivists, suggesting that these views are in opposition. The passage goes on to state that *constructivists gain acceptance by misrepresenting technological determinism* (lines 25–26). This misrepresentation is presented as the *alternative to constructivism* (lines 29–30), suggesting that constructivists promoted their own view by contrasting it with a misrepresentation of determinists' views.

- A The passage mentions empirical studies in relation to Clark's study but not Braverman's analysis.
- B The passage does not mention that managers were supportive of any particular point of view within the sociology of technology.
- C The passage does not mention any hypothetical situations as being used by the constructivists in support of their view.
- D **Correct.** The passage indicates that the constructivists have come into fashion by contrasting their own views with a misrepresentation of the views of technological determinists.
- E The passage does not describe the constructivists as making determinations regarding the degree of impact that technological change has on social or managerial organization.

The correct answer is D.

126. The author of the passage uses the expression "are supposed to" in line 27 primarily in order to

- (A) suggest that a contention made by constructivists regarding determinists is inaccurate
- (B) define the generally accepted position of determinists regarding the implementation of technology
- (C) engage in speculation about the motivation of determinists
- (D) lend support to a comment critical of the position of determinists
- (E) contrast the historical position of determinists with their position regarding the exchange modernization



**Evaluation**

This question requires understanding how a particular phrase functions in the passage as a whole. In the third paragraph the passage states that *constructivists gain acceptance by misrepresenting technological determinism* (lines 25–26) and follows this claim with an example of this misrepresentation, stating that *technological determinists are supposed to believe, for example* (lines 27–28). This line implies that the constructivist view of the determinists is inaccurate.

- A **Correct.** The passage uses the expression in part to provide an example of the constructivists' misrepresentation of the determinists.
- B The passage indicates that the view attributed to the determinists is a misrepresentation, not one that is generally accepted by determinists.
- C The expression in the passage is part of a discussion about the motivation of constructivists, not determinists.
- D The expression in the passage is part of a discussion that is critical of the constructivists, not the determinists.
- E The passage does not describe either the historical position of determinists or their position on the exchange modernization.

The correct answer is A.

127. Which of the following statements about Clark's study of the telephone exchange can be inferred from information in the passage?

- (A) Clark's reason for undertaking the study was to undermine Braverman's analysis of the function of technology.
- (B) Clark's study suggests that the implementation of technology should be discussed in the context of conflict between labor and management.
- (C) Clark examined the impact of changes in the technology of switching at the exchange in terms of overall operations and organization.

- (D) Clark concluded that the implementation of new switching technology was equally beneficial to management and labor.
- (E) Clark's analysis of the change in switching systems applies only narrowly to the situation at the particular exchange that he studied.

**Inference**

This question requires understanding what the passage implies in its discussion of a point of view. The details of Clark's views are discussed primarily in the final paragraph. The passage states that on an empirical level, Clark demonstrates that technological change regarding switches at the telephone exchange *altered work tasks, skills, training opportunities, administration, and organization of workers* (lines 44–46). The passage goes on to state Clark's contention that these changes even influenced negotiations between management and labor unions.

- A The passage indicates that Clark's study addressed the extremes of both technological determinism and social constructivism. It cites Braverman as a proponent of social constructivism but provides no evidence that Clark's motivation in beginning his study was specifically to target an analysis offered by Braverman.
- B The passage indicates that Clark attributed some organizational change to the way labor and management negotiated the introduction of technology but does not mention conflict between them.
- C **Correct.** According to the passage, Clark concludes that changes to the technology of switches had an influence on several aspects of the overall operations and organization of the telephone exchange.
- D The passage does not indicate that Clark assesses the benefits of technological change to either labor or management.
- E The passage indicates that Clark believes the change in switching technology influenced many aspects of the overall operations of the telephone exchange.

The correct answer is C.



Questions 128–133 refer to the passage on page 414.

128. According to the passage, the five well-known plant hormones are not useful in controlling the growth of crops because
- (A) it is not known exactly what functions the hormones perform
  - (B) each hormone has various effects on plants
  - (C) none of the hormones can function without the others
  - (D) each hormone has different effects on different kinds of plants
  - (E) each hormone works on only a small subset of a cell's genes at any particular time

### Supporting ideas

To answer this question, look for information that is provided in the passage. Lines 16–20 explain that each of the five plant hormones *has more than one effect on the growth and development of plants*; for this reason, they *are not very useful in artificially controlling the growth of crops*.

- A Lines 20–25 describe in detail the multiple functions of the hormone auxin.
- B **Correct.** The hormones *have so many simultaneous effects* on plants that they are not useful in controlling the growth of crops.
- C The passage provides no evidence to support this reason.
- D No information is given in the passage to support this reason.
- E The hormones' multiple effects on plant growth, not their specific effect at the cellular level, make them ineffective at artificially controlling crop growth.

**The correct answer is B.**

129. The passage suggests that the place of hypothalamic hormones in the hormonal hierarchies of animals is similar to the place of which of the following in plants?
- (A) Plant cell walls
  - (B) The complement of genes in each plant cell
  - (C) A subset of a plant cell's gene complement
  - (D) The five major hormones
  - (E) The oligosaccharins

### Inference

This question asks for information that is not directly stated in the passage. It requires examining the analogy between the action of hormones in animals and in plants, which is the subject of the third and fourth paragraphs. In animals, hypothalamic hormones stimulate the pituitary gland to synthesize and release many different hormones; this process causes hormones from the adrenal cortex to be released. A similar *hierarchy of hormones* may exist in plants. The pleiotropic plant hormones may activate the enzymes that, in turn, release oligosaccharins from the cell wall. It is reasonable to infer that, in triggering the action, the plant hormones may act in a way similar to the hypothalamic hormones in animals.

- A Plant cell walls do not activate enzymes as the hypothalamic hormones activate the pituitary gland.
- B The passage states that all cells of a plant start out with the same complement of genes (lines 1–2), but this statement is not part of the analogy.
- C Line 5 refers to the subset of genes, but it is not a part of the analogy.
- D **Correct.** Like hypothalamic hormones in animals, the five major plant hormones may be responsible for releasing the catalysts for growth.
- E The oligosaccharins are part of the hierarchy, but they are not equivalent to the hypothalamic hormones in releasing other hormones.

**The correct answer is D.**

130. The passage suggests that which of the following is a function likely to be performed by an oligosaccharin?
- (A) To stimulate a particular plant cell to become part of a plant's root system
  - (B) To stimulate the walls of a particular cell to produce other oligosaccharins
  - (C) To activate enzymes that release specific chemical messengers from plant cell walls
  - (D) To duplicate the gene complement in a particular plant cell
  - (E) To produce multiple effects on a particular subsystem of plant cells

**Inference**

Answering this question requires making an inference based on the information in the passage. The analogy between animal and plant hormones describes a process that ends, in animals, with *specific effects on target organs all over the body* (lines 33–34). While the pleiotropic plant hormones have multiple effects, the oligosaccharins are described as *more specific chemical messengers* (lines 43–44). It is reasonable to infer that oligosaccharins affect a specific part of a plant's growth.

- A **Correct.** This is the only response that gives an example of an effect on a specific aspect of plant growth and development.
- B The last paragraph explains that enzymes release oligosaccharins. The passage provides no evidence that oligosaccharins stimulate the release of other oligosaccharins.
- C The pleiotropic plant hormones, not the oligosaccharins, may activate the enzymes (lines 41–43).
- D The passage does not discuss such duplication.
- E The oligosaccharins, as *more specific chemical messengers*, have a specific effect, not multiple effects, on plant growth.

**The correct answer is A.**

131. The author mentions specific effects that auxin has on plant development in order to illustrate the
- (A) point that some of the effects of plant hormones can be harmful
  - (B) way in which hormones are produced by plants
  - (C) hierarchical nature of the functioning of plant hormones
  - (D) differences among the best-known plant hormones
  - (E) concept of pleiotropy as it is exhibited by plant hormones

**Logical structure**

To answer this question, reread the section where auxin is discussed. The second paragraph explains that each of the five major pleiotropic hormones, including auxin, *has more than one effect on the growth and development of plants*. The author then lists auxin's multiple effects as an example of the principle of pleiotropy in plants.

- A The passage does not discuss harmful effects.
- B The passage discusses the effects of hormones, not their production.
- C Auxin is used to exemplify the many different effects of a pleiotropic hormone, not its role in a hierarchy of hormones.
- D The differences among the five major hormones are not discussed.
- E **Correct.** The author lists auxin's multiple effects to illustrate how pleiotropic hormones affect plant growth.

**The correct answer is E.**

132. According to the passage, which of the following best describes a function performed by oligosaccharins?
- (A) Regulating the daily functioning of a plant's cells
  - (B) Interacting with one another to produce different chemicals
  - (C) Releasing specific chemical messengers from a plant's cell walls
  - (D) Producing the hormones that cause plant cells to differentiate to perform different functions
  - (E) Influencing the development of a plant's cells by controlling the expression of the cells' genes

**Supporting ideas**

To answer this question, look for information that is provided in the passage. Oligosaccharins are *regulatory molecules* (line 13). They form part of the complex system that turns on, or expresses, a small subset of genes in a particular kind of cell. As explained in the first paragraph, this process allows plant cells to differentiate and form different plant structures. Unlike the five major plant hormones, the oligosaccharins affect a specific aspect of the plant's growth (lines 14–17).

- A The passage does not discuss the daily functioning of a plant's cells.
- B The passage provides no evidence of this interaction.
- C The oligosaccharins are fragments of the cell wall (line 39) and the specific chemical messengers from the cell wall (lines 43–44).
- D The oligosaccharins are not said to produce hormones.
- E **Correct.** Oligosaccharins are part of the system that turns on, or expresses, the subset of a cell's genes that allows cells to grow into different plant structures.

The correct answer is E.

133. The passage suggests that, unlike the pleiotropic hormones, oligosaccharins could be used effectively to
- (A) trace the passage of chemicals through the walls of cells
  - (B) pinpoint functions of other plant hormones
  - (C) artificially control specific aspects of the development of crops
  - (D) alter the complement of genes in the cells of plants
  - (E) alter the effects of the five major hormones on plant development

#### Inference

The passage does not explicitly state how oligosaccharins could be used, but a use can be inferred. The second paragraph establishes that the pleiotropic hormones are not useful in artificially controlling crop growth because of their multiple, diverse effects. Oligosaccharins are contrasted with the hormones because they have specific effects. Thus it is reasonable to infer that oligosaccharins might be used to control specific aspects of crop growth.

- A Passage of chemicals through cell walls is not discussed.
- B The passage does not indicate that oligosaccharins act in this way.
- C **Correct.** Because the oligosaccharins have specific rather than multiple effects, they might have the potential to be used to control specific aspects of a crop's growth.

- D The oligosaccharins are not said to alter the cells' complement of genes.
- E The passage does not show that oligosaccharins alter the hormones' effects.

The correct answer is C.

Questions 134–139 refer to the passage on page 416.

134. The author indicates explicitly that which of the following records has been a source of information in her investigation?
- (A) United States Immigration Service reports from 1914 to 1930
  - (B) Payrolls of southern manufacturing firms between 1910 and 1930
  - (C) The volume of cotton exports between 1898 and 1910
  - (D) The federal census of 1910
  - (E) Advertisements of labor recruiters appearing in southern newspapers after 1910

#### Supporting ideas

Since the question uses the word *explicitly*, it is clear that the answer can be found in the passage. In lines 27–30, the author refers to the number of African American workers in *manufacturing and mechanical pursuits*, a phrase cited as coming from the federal census and indicating that she was using census data. While she probably used other sources as well, no other source is explicitly mentioned.

- A Immigration Service reports are not mentioned in the passage.
- B Payroll records are not mentioned in the passage.
- C While the decline of the cotton industry is mentioned, records of exports are not.
- D **Correct.** The federal census is indicated as a source of information on the employment of African American workers.
- E Labor recruiters and the African American press are mentioned, but there is no mention of data being collected from labor recruiting ads.

The correct answer is D.

135. In the passage, the author anticipates which of the following as a possible objection to her argument?
- (A) It is uncertain how many people actually migrated during the Great Migration.
  - (B) The eventual economic status of the Great Migration migrants has not been adequately traced.
  - (C) It is not likely that people with steady jobs would have reason to move to another area of the country.
  - (D) It is not true that the term “manufacturing and mechanical pursuits” actually encompasses the entire industrial sector.
  - (E) Of the African American workers living in southern cities, only those in a small number of trades were threatened by obsolescence.

#### Logical structure

Answering questions about the author’s line of argument requires following the steps in the logical structure of that argument. The author argues that many of the African American migrants to the North may have lived and worked in southern urban areas, not rural areas. In lines 33–36, she recognizes that some people may find it *surprising to argue* that African Americans with steady jobs would leave and proceeds to offer an *explanation* based on southern labor conditions. She thus anticipates the objection that workers would not leave steady jobs.

- A The actual number of people migrating is not part of the author’s argument, which concerns whether the migrants came from urban or rural backgrounds.
- B The eventual economic status is outside the scope of the argument.
- C **Correct.** The author anticipates this objection and answers it by citing southern labor conditions.

- D The author claims that “*manufacturing and mechanical pursuits*” encompassed roughly *the entire industrial sector* (lines 29–31) but does not address—either explicitly or implicitly—any possible objections relating to this claim.
- E The number of industrial workers leaving southern cities specifically because of job obsolescence is not at issue and is thus not the basis for a potential objection. In the final paragraph, the author is simply presenting her case that wage pressures affected southern African American urban workers in general, in both artisan trades and newly developed industries.

**The correct answer is C.**

136. According to the passage, which of the following is true of wages in southern cities in 1910?

- (A) They were being pushed lower as a result of increased competition.
- (B) They had begun to rise so that southern industry could attract rural workers.
- (C) They had increased for skilled workers but decreased for unskilled workers.
- (D) They had increased in large southern cities but decreased in small southern cities.
- (E) They had increased in newly developed industries but decreased in the older trades.

#### Supporting ideas

The information that this question asks for is stated in the passage and can be found by careful rereading. The last paragraph is about working conditions in the South. Lines 52–55 show that an influx of rural workers had increased competition for the available industrial jobs and driven wages lower.



- A **Correct.** Lines 52–55 indicate that wages were going down as more workers arrived from rural areas and competed for jobs.
- B Rural workers arrived in the city because of the boll weevil infestation, not because of the promise of higher wages, and their arrival depressed wages.
- C The passage refers to wages for industrial jobs but does not distinguish between the wages of skilled workers and unskilled workers in this respect.
- D The passage does not discuss wage differences between large and small southern cities.
- E The passage provides no information on differences in wages between older trades and new industries.

**The correct answer is A.**

137. The author cites each of the following as possible influences in an African American worker's decision to migrate north in the Great Migration EXCEPT

- (A) wage levels in northern cities
- (B) labor recruiters
- (C) competition from rural workers
- (D) voting rights in northern states
- (E) the African American press

#### Supporting ideas

Use the process of elimination to answer this question regarding what specifically does NOT appear in the passage. Four of the five answers are mentioned as influences on migration, and one is not. Match each answer with its mention in the passage; the choice that does not have a match is the correct answer. In this case, the only answer not mentioned is *voting rights*.

- A Northern wage levels are mentioned in lines 49–51.
- B Labor recruiters are mentioned in line 48.
- C Competition from rural workers is mentioned in lines 52–54.
- D **Correct.** Voting rights in northern states are not mentioned in the passage; the author has not cited them as a possible influence on a migrant's decision.
- E The African American press is mentioned in lines 48–49.

**The correct answer is D.**

138. It can be inferred from the passage that the “easy conclusion” mentioned in line 58 is based on which of the following assumptions?

- (A) People who migrate from rural areas to large cities usually do so for economic reasons.
- (B) Most people who leave rural areas to take jobs in cities return to rural areas as soon as it is financially possible for them to do so.
- (C) People with rural backgrounds are less likely to succeed economically in cities than are those with urban backgrounds.
- (D) Most people who were once skilled workers are not willing to work as unskilled workers.
- (E) People who migrate from their birthplaces to other regions of a country seldom undertake a second migration.

#### Inference

The question directs one's attention to line 58 and the phrase *easy conclusion*. In this context, *easy* has the negative connotation of “facile” or “simplistic” and suggests the author's disagreement with the conclusion that the economic problems of the migrants to northern urban areas were linked to their rural backgrounds. The *conclusion* derived from this link is first discussed in lines 17–19, where lack of economic success in the North is tied to a rural background.



- A The author does assume economic motives for migration, but this assumption is not linked to the conclusion about difficulties arising from a rural background.
- B This point is not discussed in the passage and is not related to the conclusion that a rural background is linked to economic problems.
- C **Correct.** The conclusion referred to in line 58 is based on the assumption that rural background will hinder economic success in urban settings.
- D The conclusion refers to all people from rural backgrounds and does not distinguish between skilled and unskilled workers.
- E The conclusion about the economic difficulties of migrants from rural backgrounds makes no assumptions about whether people migrate more than once.

The correct answer is C.

139. The primary purpose of the passage is to

- (A) support an alternative to an accepted methodology
- (B) present evidence that resolves a contradiction
- (C) introduce a recently discovered source of information
- (D) challenge a widely accepted explanation
- (E) argue that a discarded theory deserves new attention

#### Main idea

Answering questions about primary purpose requires thinking about the underlying structure of the passage. In the first paragraph, the author describes the Great Migration and mentions the assumption that most migrants came from rural areas. Some people then concluded that the migrants' economic difficulties were due to their rural background. In the second paragraph, the author speculates that many migrants could have come from urban areas, and in the third paragraph, she offers information that supports her position. Essentially, if the migrants came from urban areas, their subsequent economic difficulties cannot be attributed to their nonexistent rural background. An analysis of the structure of the passage thus reveals that the author is presenting a generally accepted view and then challenging it.

- A The author is showing the weakness in an explanation; there is no discussion of a methodology or of an alternative methodology.
- B The reasoning presented in the passage contradicts what the author describes as prevailing ideas but does not resolve any previous contradiction.
- C The author does not mention any source of information that was previously unavailable. While census records are briefly mentioned, they are hardly a recently discovered source of information.
- D **Correct.** The author first discusses a widely accepted explanation of the economic difficulties of African American migrants and then challenges that explanation.
- E The author argues against an explanation she thinks should be discarded. She does not discuss any previously discarded theory.

The correct answer is D.